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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

ADDRESSES AND ORIGINAL ARTICLES.

Toxic Jaundice. By Sir WILLIAM WILLCOX, F.R.C.P. Lect. II.—(*Illustrated*) 57
Effect of Brain Diet in Pernicious Anæmia. By C. C. UNGLEY, M.R.C.P.—(*Illustrated*) 63
Eosinophilia. A Record of Three Cases. By H. H. SANGUINETTI, M.D. 67
Psychosis in Osteitis Deformans. By S. J. HARTFALL, M.R.C.P. .. 68
Pituitary Cyst. An Account of a Case with Tonic Fits resembling Tetany. By R. WEST, M.R.C.P. 69

CLINICAL AND LABORATORY NOTES.

A Glycosuric Family without Hyperglycæmia. By F. PARKES WEBER, F.R.C.P. 71
Recovery from Streptococcal Septicæmia, &c. By A. H. G. BURTON, M.D., and A. R. BALMAIN, M.D.—(*Illustrated*) 72

MEDICAL SOCIETIES.

Association of Clinical Pathologists: Clinical Pathology of the Cerebrospinal Fluid 74
Pathological Society..... 75

REVIEWS AND NOTICES OF BOOKS

Chronic Arthritis and Rheumatoid Affections. By B. Langdon Wyatt, M.D. 76
Treatment of Epilepsy. By Prof. Fritz B. Talbot, M.D. 76
Food Poisoning and Food-borne Infection. By E. O. Jordan..... 77
Die Primäre Verrücktheit. Vol. I. By Kurt Kolle 77
Vaccination préventive et curative du cobaye et du lapin contre la tuberculose humaine. By Jules Auclair 77
La Vaccination contre la tuberculose par le B C G. By Dr. R. Chaussinand 77
Diagnosis and Treatment of Venereal Diseases. By David Lees, F.R.C.S... 78
A Text-book of Histology. By A. A. Maximow. Completed and edited by William Bloom..... 78

LEADING ARTICLES

THE CENSUS OF 1931..... 79
THE FUNCTIONS OF A MEDICAL SOCIETY..... 80
SOCIAL PSYCHIATRY..... 80

ANNOTATIONS.

Discipline under N.H.I... 82
The Ketogenic Diet for Epilepsy 82
Maternal Mortality Again 82
The Limits of Preventive Medicine 83
The Jewish Dental Clinic 84
Suprarenal Cortex in Addison's Disease..... 84
Embryonic Injuries 84
The Control of Malaria in South Africa 85
A Portrait of Dr. Alfred Cox 85
A Short Course in Tropical Medicine 85
Contributory Schemes and Hospital Benefits 86
Annual Health Reports for 1930 86

PUBLIC HEALTH SERVICES.

Reports of Medical Officers of Health: Coventry.—Reading.—Bootle.—West Bromwich.—Eastbourne 98
Infectious Disease in England and Wales.... 92

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Indian Medical Service.—Royal Air Force.—Colonial Medical Service.—Commissions in Royal Army Medical Corps 94

NEW INVENTIONS.

A Tray for Radium Needles. By EDGAR FRESHMAN, F.R.C.S.—(*Illustrated*) .. 78

PANEL AND CONTRACT PRACTICE.

Pitfalls of Panel Practice.—Complaints of Irregular Certification.—Default in Keeping Records.—Question of Assistant.—Complaints of Delay and Inadequate Treatment. Conclusions 87

SPECIAL ARTICLES.

Report of the Board of Control: Mental Health in 1930 90
Centenary of the Leeds School of Medicine.—(*Illustrated*)..... 92
Ireland: Visit of Dr. Ariëns Kappers.—Honorary Degrees at Dublin University..... 94

CORRESPONDENCE.

Successful Medical Societies: Four Distinct Groups.—The Part Played by Tradition.—Collective Expression of Local Practitioners 95
Treatment of Cerebrospinal Fever (Dr. L. P. Gibson) 96
Acute Rheumatism following Tonsillitis (Dr. Bernard Schlesinger, Dr. Wilfrid Sheldon) 97
State Control of Therapeutic Substances (Dr. R. A. O'Brien) 97
Mortality after Prostate Operations (Dr. R. J. Minnitt) 97
Audiometry and Audiography (Sir James Dundas-Grant) 98
Tubercle Bacilli in Cream (Capt. G. Fawsitt Taylor) 98

MEDICAL NEWS.

Royal College of Surgeons of England..... 101
University of Liverpool.. 101
University of Durham.... 101
University of Birmingham 101
Victoria University of Manchester 101
Liverpool Royal Infirmary 86
Bristol General Hospital 94
Fellowship of Medicine and Post-Graduate Medical Association..... 101
Mental Hospitals Association 102
St. Thomas's Hospital Dinner 102
A Hospital Garden Party 102
Course on Surgical Tuberculosis 102
Hygiene and Nursing in the Tropics 102
Rockefeller Medical Fellowships 102
Royal Society of Tropical Medicine and Hygiene.. 102
Benefaction for Research on Puerperal Fever 102
Brighton and Hove Provident Dental Hospital.. 102
Hospital Libraries 102
Post-graduate Training for Ship Surgeons 102

OBITUARY.

Edward Beadon Turner, F.R.C.S.—(*With portrait*) 100
William Elder, F.R.C.P. 101

PARLIAMENT.

Notes on Current Topics: Sterilisation of Defectives.—Crews' Accommodation on British Ships.—Mining Industry Welfare.—Rural Housing 102
House of Commons: Motor Accidents and Danger Signs.—Foreign Strawberry Pulp and Preservatives.—Pharmacy and Poisons Bill.—Schools for Mentally Defective Children.—Insured Persons and Sickness Benefit.—Slum Clearance and Plague of Vermin... 103

NOTES, COMMENTS, AND ABSTRACTS.

The Work of an Industrial Clinic. By N. HOWARD MUMMERY, M.R.C.S..... 106
The Dresden Hygiene Museum 110
Holidays for Working Women 110

Appointments 105
Vacancies 105
Births, Marriages, Deaths 105
Medical Diary 110

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BY SIR WILLIAM WILLCOX, K.C.I.E., C.B., C.M.G., M.D., F.R.C.P. LOND.,
PHYSICIAN TO ST. MARY'S HOSPITAL.

LECTURE II.—SYMPTOMS.

THE symptoms of toxic jaundice may be grouped under two headings according to whether they are those of the causal agent or are due to its effect on the liver. Those of the causal agent are naturally of great variety; for example, in acute phosphorus poisoning there will be the acute symptoms of a burning sensation in the mouth and throat accompanied by those of acute gastro-enteritis. These symptoms may subside more or less within 24 hours and are then succeeded, either immediately or after an interval of a day or two, by jaundice and the grave symptoms due to hepatic necrosis. The jaundice due to quinoline derivatives such as atophan may be preceded by no premonitory symptoms or only by slight nausea or occasional vomiting.

Where the causal agent is biological in origin the symptoms of the primary infection, such as typhoid or malaria, will be manifest. In some cases of this type, such as epidemic catarrhal jaundice, the premonitory symptoms may be so slight as almost to escape notice.

The symptoms due to the effect on the liver of the toxic cause vary in intensity according to the amount of impairment of function of the liver cells. The jaundice may be slight or deep. The stools may be pale and clay-coloured for a varying period, ranging from a few days to weeks, and in mild cases the reduced bile-pigments (stercobilin) in the stools may be simply diminished in amount so as to give a yellow colour, paler than normal, for a few days. The urine may contain much bile-pigment, with some bile-salts and some urobilin. The van den Bergh reaction of the blood-serum is usually biphasic. The bile-pigment in the blood is greatly raised and the icterus index much increased. The lævulose-tolerance curve is abnormal and indicates hepatic function deficiency.

The symptoms caused by the increased bile-pigments are slight, since usually the deep jaundice does not persist long enough to give rise to the severe pruritus and skin irritation associated with prolonged mechanical obstruction of the main bile-ducts. The pulse-rate in toxic jaundice is usually quickened owing to the effect of the primary toxic cause. It does not constantly show the slow rate associated with the jaundice due to mechanical obstruction of non-toxic origin.

While the symptoms caused by the increased bile-pigment in the blood are mild, though the colour changes in the skin mucous membranes, urine, and stools are strikingly manifest, yet at any time during the course of an attack the very grave symptoms of auto-intoxication due to loss of hepatic function may develop. These will be considered under the heading of—

Acute and Subacute Necrosis of the Liver.

The term "acute yellow atrophy" has been applied to this condition and is still commonly used in text-books. The term "necrosis" is preferable because it is necrosis, not atrophy, which is the pathological change. The liver, while commonly much smaller in size than normal, may in acute cases be larger (vide Cases 1 and 6), so that the word atrophy, implying smallness of size, is not always appropriate. Then again, while the colour of the liver is usually yellow, in some of the more prolonged cases it may be reddish (vide Case 3), a condition to which the term subacute red necrosis is more accurately applied.

Necrosis of the liver has been classed as a special disease affecting the liver, but pathological studies during recent years show that it really results from some profound toxic cause, due either to an exogenous chemical poison or to the toxins of some toxic infection of biological origin, or to the poisons of the auto-intoxication of a disordered metabolism. It must be admitted that cases of necrosis of the liver are still met with in which the toxic cause cannot with certainty be determined.

The condition has become more frequent of late years. This may be accounted for by increased exposure to drugs having a selective toxic effect on the liver—e.g., arsenobenzol and quinophan.

MORBID ANATOMY.

It appears to me that the term necrosis of the liver should include all those cases where the liver cells have been so profoundly poisoned as to be functionally dead. Thus in an acute case of delayed chloroform poisoning, if death occurs early—i.e., within two or three days—the liver will be enlarged and yellow, and many of the liver cells will show distension with fat globules; if, however, death occurs later—say, in a week or so—the liver will be much shrunken in size owing to the absorption of the cells which previously showed fatty distension. In both of these cases the liver cells must have undergone death from the toxic effects to which they have been exposed.

Usually in necrosis of the liver life is sufficiently prolonged to admit of the shrinkage of the liver, which has been greatly enlarged in the early stages of the illness, so that commonly a much shrunken soft flabby liver is found on post-mortem examination; the weight may be reduced to one-half or even one-third of the normal, and the colour is yellowish or greenish-yellow, often with reddish areas due to subcapsular hæmorrhage. On section, the very acute cases—e.g., Cases 1 and 6—will show a bright yellow appearance, while the less acute cases, such as Case 3, show a yellow groundwork with red areas: subacute red necrosis, to which the old term red atrophy was applied.

The kidneys are enlarged, soft, and bile-stained, and often show small hæmorrhages on the surface. On microscopical examination marked degeneration of the epithelium is present and the tubular cells show marked fatty changes.

SYMPTOMS.

The symptoms of "necrosis of the liver" are dramatic, and run a characteristic and usually rapidly fatal course. Various terms have been used to describe this condition. "Icterus gravis" has been commonly adopted; its disadvantage as a name is that icterus may be slight or even absent in the very acute cases. Some writers have suggested the word cholæmia; this again is unsatisfactory because excess of bile in the blood, as seen in cases of stricture of the common bile-duct, does not per se produce toxic symptoms. Patients with complete obstruction of the bile-duct may live for months without symptoms beyond those

* The Lumleian Lectures delivered before the Royal College of Physicians of London on March 19th, 24th, and 26th, 1931. Lecture I. appeared in THE LANCET of July 4th.

of the skin irritation due to the increased bile content in the blood. I would suggest as more suitable for the toxic condition caused by necrosis of the liver the term hypohepatism. This expresses the fact that there is loss of liver function, which is the undoubted cause of the grave symptoms. The term corresponds to similar terms in use expressive of loss of function of the respective organ, such as hypothyroidism, hypopituitarism, and hypoadrenalism.

Necrosis of the liver is ushered in by nausea, vomiting, and gastric irritation; the tongue is furred, dry, and tremulous; there is a feeling of mental anxiety and sense of impending disaster; the patient becomes restless, quarrelsome, and difficult to manage. Headache and photophobia are sometimes present. Twitchings of the muscles often occur; the knee-jerks become brisker than normal. An extensor plantar reflex may occur at this stage, and is of very serious portent. Transient squint or involuntary ocular movements may occur, and in some cases marked head retraction. The nervous symptoms accompanying the development of acute hepatic necrosis may in some cases very closely resemble those of meningitis, the differential diagnosis being readily determined by the condition of the cerebro-spinal fluid removed by lumbar puncture.

These premonitory symptoms may last from a few hours to a few days and are then commonly succeeded by delirium, drowsiness, and stupor, passing into coma. Cheyne Stokes's breathing is often marked. The temperature commonly rises, and may reach a high level, of 104° or more, a few hours before the end. Hæmorrhages are very common, such as severe hæmatemesis, epistaxis, bleeding from the gums, rectal bleeding, hæmaturia, purpuric patches on the skin, or vaginal hæmorrhage.

Convulsions may develop during the stage of stupor or coma. The plantar reflexes are often, but not always, extensor in the stage of coma. The pulse becomes rapid and feeble. The urine usually contains albumin and some granular casts, and often red blood corpuscles. Leucine and tyrosine crystals, so often described in the text-books as characteristic of this condition, are by no means common in my experience.

Death occurs at varying intervals after the onset of symptoms, usually within three or four days, but it may be earlier where severe hæmorrhages such as hæmatemesis take place.

TREATMENT.

Treatment resolves itself into the treatment of cases: (1) during the stage of toxic jaundice when the jaundice is latent or developed; (2) during the stage when definite symptoms of hepatic inefficiency due to necrosis of liver have developed.

(1) Removal of the toxic cause should be immediate. The approach of jaundice may often be detected by the quantitative van den Bergh or icterus index test.[13] Alkalis, such as citrate of soda, bicarbonate of soda, and citrate of potash, in full repeated doses, should always be administered.[11 15] Saline aperients, such as magnesium and sodium sulphate, are of value in promoting the emptying of the gall-bladder and the free flow of bile. Glucose should be given freely.[16 17] It appears to act by providing the liver cells with glycogen which protects them against the action of poisons. Glucose should be given before the administration of any drug having a toxic action on the liver, such as an anæsthetic or an arsenobenzol compound. An ounce may be given with coffee or fruit juice two hours previously. If toxic jaundice has developed, the free administration of glucose should be continued, and subcutaneous or intravenous methods may be resorted to. I have used liver extract with benefit in several cases where a mild and persistent jaundice has occurred as the result of some chronic intestinal infection of bacterial origin.

Diet should be arranged so that as little burden is thrown on the liver cells as possible. Protein should be greatly reduced and fatty foods eliminated. Fresh fruit juices, glucose, honey, raisin tea, whey, fruits, vegetables, and carbohydrate foods should form the main portion of the dietary.

(2) Where the grave symptoms of acute necrosis of the liver are beginning, active treatment should be adopted without delay. Glucose in 5 per cent. or 10 per cent. solution in normal saline given subcutaneously or intravenously is of value.

Alkalis, such as citrate of soda ʒi and bicarbonate of soda ʒss, every three hours, should be given by the mouth. By rectum bicarbonate of soda 2 per cent. and glucose 5 per cent., as much as can be retained, should be given six-hourly. One or two pints of bicarbonate of soda 1 per cent., with glucose 5 per cent., may be given intravenously with advantage.

Where hæmorrhages have begun, calcium chloride 1 per cent. may be given intramuscularly or intravenously in one dose of 10 to 20 c.cm., and at the same time parathormone in a dose of 10 units may be given subcutaneously. When coma has developed it may be advisable to perform lumbar puncture and draw off 10 to 20 c.cm. of the cerebro-spinal fluid.

Active treatment in the early stages of hypohepatism has not infrequently led to an arrest of the symptoms and subsequent recovery. When the stage of coma has arrived recovery has not often occurred, though a few instances of success have been seen after the adoption of treatment on the above lines.

Classification of Toxic Jaundice.

Toxic jaundice may be best classified according to its causation:—

1. *Chemical poisons*—viz., the halogen group of organic compounds, which includes tetrachlorethane, carbon tetrachloride, chloroform, ethyl chloride, ethyl bromide, trichlorethylene, and tribromethyl alcohol (Avertin).

Arsenobenzol derivatives, such as salvarsan, kharsivan, neo-salvarsan, novarsenobillon, and gallyl.

Quinoline derivatives, examples of which in common use are: quinophan (phenylquinoline carboxylin acid, also known under the names of atophan, agotan, cinchophen, and phenoquin), atophanyl, atoquinol.

Aromatic organic compounds, such as trinitrotoluene, dinitrobenzene, dinitrophenol, picric acid, phenylhydrazine, toluylene diamine, and acriflavine derivatives.

Inorganic arsenic compounds, including arseniuretted hydrogen.

Antimony compounds, inorganic and organic, both of which are much used in the treatment of tropical diseases, such as kala-azar and trypanosomiasis; phosphorus, alcohol, lead, and synthalin.

The above list is of necessity very incomplete, since the number of chemical poisons having a toxic action on the liver is very large indeed. In this group must be included mushroom poisoning and snake bite.

2. *Bacterial poisons*, such as the toxins from enteric and paratyphoid fever, parenteric infections, food poisoning, influenza, pneumonia, streptococcal infections, pyogenic infections, and epidemic catarrhal jaundice.

3. *Protozoal poisons*, such as the toxins from syphilis, relapsing fever, yellow fever, spirochætosis ictero-hæmorrhagica, malaria, amœbic dysentery, typhus fever, and kala-azar.

4. *Auto-intoxications*, such as the toxæmias associated with pregnancy, recurring vomiting (acidosis), uræmia, and acholuric jaundice.

1. Chemical Poisons.

THE HALOGEN GROUP OF ORGANIC COMPOUNDS.

The effect of chloroform on the liver in causing delayed poisoning, which is usually accompanied by jaundice, has been known for many years.

It has been found that weight for weight, compared

with chloroform, carbon tetrachloride is four times more toxic, and that tetrachlorethane and trichlorethylene are respectively 2·8 and 1·36 times more toxic.[18] These figures must represent the relative toxic action of these substances on the liver cell.

Carbon tetrachloride is extensively used in the tropics as a remedy for ankylostomiasis. Several cases of death from acute necrosis of the liver from the taking of the drug in this way have been recorded, and cirrhosis of the liver may result from continued repeated doses.[19] Fatty degeneration of the liver in animals has also been demonstrated.[20]

Chloroform.—After the administration of chloroform as an anæsthetic toxic jaundice (delayed chloroform poisoning) will occasionally develop. A series of cases in 1911 at a children's hospital in London attracted much attention.[21] Dr. R. S. Frew[21] in 1912 remarked on the frequency of acetonuria in children admitted to hospital, and pointed out that this usually commences 12 hours after admission and continues for three days. He regarded the presence of acetonuria as a sign that there was danger from delayed chloroform poisoning should this substance be given as an anæsthetic. The free administration of glucose rapidly caused a disappearance of acetonuria.

CASE 12.—As a typical case of delayed chloroform poisoning might be quoted that of a boy, aged 12, admitted to St. Mary's Hospital in February, 1916, and operated upon for appendicitis under chloroform anæsthesia. He recovered satisfactorily from the immediate effects of the operation. Three days after the operation he became drowsy, and vomiting occurred on several occasions; definite but not deep jaundice now developed. The drowsiness deepened into stupor and coma, and death occurred five days after the operation and 48 hours after the symptoms of hypohepatism (icterus gravis) commenced.

On post-mortem examination by Sir Bernard Spilsbury, intense degeneration of the liver cells was found, with marked fatty deposition.

In three recent cases of delayed chloroform poisoning occurring in association with difficult labour, on which the post-mortem examinations were carried out by Dr. Newcomb, death occurred respectively three days (Case 6), four days, and four days after the administration of the anæsthetic. In these cases the toxæmia of pregnancy no doubt accelerated the fatal termination. In each case post-mortem examination revealed the typical acute central necrosis of the liver cells associated with fatty degeneration in the periphery of the lobules. Interesting work on the action of chloroform on the liver (dogs and rats) has been published by R. M. Anderson,[22] who finds that it causes central necrosis and fatty degeneration.

In applying these results to human beings it must be borne in mind that the regenerated liver tissue is abnormal in its anatomical structure—i.e., that masses of regenerated liver cells are not grouped into true lobular structure with central and peripheral veins. This is well shown in Cases 2 and 4. There is, therefore, in human subjects a great risk of the development of portal obstruction when recovery has taken place with regeneration of liver cells following the action of toxic agents on the liver. Clinical experience supports this view, as is seen in several cases to be described.

Two unusual cases of toxic jaundice from chloroform have come to my notice.

CASE 13.—A scientific man, aged 50, first seen in September, 1919, the subject of recurring colds, conceived the idea that chloroform inhalations would kill the microbes in the mucous membrane of the air passages. He practised inhalation of chloroform in slight but repeated doses daily for six months. Jaundice then developed with enlargement of the liver, followed by the typical signs of cirrhosis with ascites. Death occurred after 18 months from this cause. There was no doubt that the chloroform inhalations were an important contributing factor in causing the cirrhosis, and also that they had given rise to an addiction habit.

CASE 14.—A lady, aged 44, seen in November, 1930, had for six months been in the habit of putting chloroform in her bath. She had been told that this would reduce her weight by removal of fat. At the end of this period, during which upwards of 124 oz. of chloroform had been used, the patient developed slight toxic jaundice, due no doubt to the inhalation of chloroform vapour during the baths. A good recovery was made after cessation of use of the drug and suitable treatment. The patient said that her weight was reduced by 1½ stone.

Tetrachlorethane, a colourless liquid smelling like chloroform and having a specific gravity of 1·614 and a boiling point of 147°, has the property of being a solvent of cellulose. It was used before the war for the preparation of a solution of cellulose which was applied to the canvas wings of aeroplanes, to give them stability and make them air- and water-proof. The solution, which also contained acetone, alcohol, and benzene, was known by the aeroplane workers as "dope." Its intensive use immediately before and in the early part of the war led to the great exposure of the workers to its vapour.[23 24 25]

CASE 15.—On Nov. 15th, 1914, I saw the first case in this country of tetrachlorethane poisoning. The patient came to St. Mary's Hospital and was seen by me in the out-patient department. He gave a history of employment in an aeroplane factory since August 8th, 1914, during which time he had been exposed to the vapour of the dope which he had used for varnishing the wings. He said that ten other workers were similarly affected and that the dope smelt like chloroform; also that others who did not use the dope had similar symptoms.

On Oct. 24th he suffered from jaundice, epigastric discomfort, nausea, and vomiting in the mornings. At my examination marked jaundice was present; the patient was obviously ill, with a temperature of 99·5°, a pulse-rate of 96, an enlarged liver, pale stools, high-coloured urine, and furred and dry tongue.

The diagnosis of toxic jaundice, due to some substance of the chloroform group of poisons, was made. The patient went into the Middlesex Hospital, where he developed ascites, and died on Nov. 26th, 1914. An inquest was held by the late Mr. Luxmore Drew and a post-mortem examination made by Sir Bernard Spilsbury, who found a condition of subacute necrosis of the liver which he attributed to some toxic poison.

Investigations carried out by me on the aeroplane dope showed that the toxic agent was tetrachlorethane. Animal experiments conducted by Spilsbury and myself showed that when rats were exposed to the inhalation of vapour of the dope, or to tetrachlorethane vapour, for eight hours a day for a week, fatty degeneration of the liver and definite toxic jaundice developed; fatty degeneration of the kidney cells also occurred. It was thus established that the cause of death was tetrachlorethane poisoning due to the inhalation of the vapour of the aeroplane cellulose varnish.

A considerable number of cases occurred in aeroplane factories in 1914 and the early part of 1915. Many of these proved fatal, with typical post-mortem signs of necrosis of the liver.[24 25]

When I visited the aeroplane factory on Dec. 4th, 1914, many of the workers were suffering from malaise associated with nausea, biliousness, constipation, anorexia, and headache, due to toxic latent jaundice, and some of them showed slight icterus of the sclerotics. These workers had not yet gone on the sick-list, but they were in the preliminary stage of the severe toxic jaundice which occurred after further exposure to the poisonous vapour. Tetrachlorethane produces a deep jaundice of toxic type not associated with anæmia. Its action is on the liver cells and not on the blood; in other words, the jaundice is hepatogenous, not hæmolytic. It was found in 1916 that its use could be abolished, since amyl acetate, which is less poisonous, proved

to be a good solvent of cellulose and was used in its place.

Ethyl chloride is probably the least toxic of the halogen group of organic compounds; nevertheless a few fatal cases of delayed poisoning have been recorded by Guthrie from its use as an anæsthetic.[14]

Avertin or tri-brom-ethyl alcohol, a white crystalline powder, has recently been introduced as an anæsthetic. It undoubtedly has a marked toxic action on the liver and, though no cases of toxic jaundice have yet been recorded as far as I know, the possibility of danger must be borne in mind and the same preliminary precautions as to diet and acetonuria taken as with chloroform anæsthesia.

Dr. Parsons, who is at present carrying out experiments on its toxicity, has given me permission to record this recent experiment.

A rabbit weighing 1·1 kg. was given subcutaneously 26 c.cm. of 0·2 per cent. solution of crystalline avertin. This represents a normal anæsthetic dose of 0·475 g. per kg. Anæsthesia occurred 80 minutes after administration. The animal was killed 96 hours after administration. Dr. R. Williamson, of Cambridge, made the post-mortem examination. The liver was at once removed. No macroscopic changes were present. On staining with hæmatoxylin and Sudan III. (frozen sections) quite marked fatty degeneration was found in the central and intermediate zones of the lobules (see Plate, Lecture I., Fig. VII.). (×60.)

It seems probable that the toxicity of the halogen organic compounds increases with the increase of the halogen element in the molecule—e.g., tetrachlorethane is more toxic than chloroform or ethyl chloride. The bromine element probably makes a more toxic compound than the analogous chlorine derivative, and the iodine element a more toxic compound than the bromine compound; for example, iodoform is more toxic than bromoform, and bromoform than chloroform, per weight of absorbed drug.

Arsenobenzol Derivatives.—The original compound of this group was salvarsan (dioxydiamidoarsenobenzol hydrochloride), which was introduced by Ehrlich in 1910. His neosalvarsan (1912) was a modification more convenient for administration. In 1914, as a war emergency, kharsivan and neokharsivan were prepared in this country. These substances were identical in chemical and physical constitution with salvarsan and neosalvarsan respectively and had equally valuable therapeutic properties. All the arsenobenzol derivatives have a toxic action on the liver, and great care is required in their use.

CASE 16.—A female, aged 23, suffering from secondary syphilis, was on Nov. 30th, 1911, given 0·4 g. of salvarsan and on Dec. 4th, 1911, the same dose. On Dec. 7th epileptiform convulsions occurred, followed by coma and death. The urine contained albumin. Post-mortem examination by Spilsbury showed marked necrosis of the liver. Toxicological analysis by J. Webster and myself showed arsenic in large amount (0·83 mg. As_2O_3 per 100 g. in the liver).

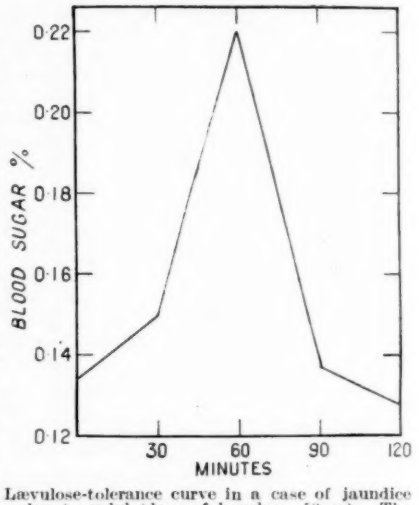
CASE 17.—A male adult, with tertiary syphilis and gummata of the legs, was given 0·6 g. of salvarsan on May 9th, 1914. No toxic symptoms occurred. On May 23rd 0·6 g. of salvarsan was given. On May 25th aphasia occurred followed by coma and convulsions and death. Post-mortem examination by Spilsbury showed advanced central necrosis of the liver cells. Toxicological analysis by Webster and myself showed much arsenic in the liver (1·1 mg. of As_2O_3 per 100 g.).

In these and similar cases no arsenic was found in the brain, so that the acute nervous symptoms were not due to the action of arsenic on the brain but to the acute auto-intoxication (hypohepatism) following on the extensive necrosis of the liver. Death occurred before there was time for jaundice to develop.

Fortunately acutely fatal cases of the above type are at the present day of extreme rarity. This is partly due to the careful testing for toxicity of the batches of arsenobenzol compounds before they are placed on the market in this country. This duty has been entrusted to the Medical Research Council since 1915. It may be mentioned that for some unexplained reason arsenobenzol compounds may vary greatly in their toxicity though chemically they may pass the necessary tests.

At the present time in the treatment of syphilis it is realised that for an effective cure large quantities of arsenobenzol are required—very much greater than those contemplated by Ehrlich. The patient can be protected by taking glucose before the doses. Any idiosyncrasy to the drug is an indication for its avoidance and the use of some other method of treatment, such as mercury or bismuth. The doses of arsenobenzol should be spaced out. I have shown that, after an intravenous dose of arsenobenzol, arsenic can be detected in the urine for at least 14 days; therefore if full doses are given this interval should be allowed between the doses.

FIG. 2.



Lævulose-tolerance curve in a case of jaundice due to galyl (dose of lævulose 50 g.). The urine passed at 120 minutes contained no reducing substance.

A typical case of arsenobenzol jaundice which was under my care was:—

CASE 18.—A man, aged 44, was admitted to St. Mary's Hospital on July 18th, 1922. He had been attending hospital for tertiary syphilis and glossitis. Galyl injections of 0·25 g. had been given on May 1st, 8th, 22nd and 29th, and on June 6th and 19th. On July 4th jaundice developed. The liver was enlarged, reaching 2 in. below the right subcostal border. On July 20th the lævulose-tolerance test showed a marked reaction for hepatic inefficiency (Fig. 2). The stools were pale for four days after admission, but afterwards became normal in colour. The liver shrank to the normal size, the jaundice disappeared, and a good recovery was made.

Quinoline Derivatives.—These are largely used at the present time for the treatment of gout and chronic rheumatic conditions. The commonest preparation is quinophan (phenyl quinoline carboxylic acid), also known by the trade names atophan, agotan, cinchophen, and phenoquin; it was introduced in 1912. A preparation on the market known as "gorum" cachets contains an appreciable amount of atophan. Atophanyl is a liquid containing equal proportions of sodium atophan and sodium salicylate in solution; it is given intravenously and intramuscularly. Atoquinol is the allyl ester of quinophan. It is a solid and is used for oral administration.

None of these drugs is on the Poisons Schedule and no restriction exists on their sale.

The occurrence of toxic jaundice after the use of quinophan and the above-mentioned group of substances has been noted by many observers for some years.

In the *British Medical Journal* in 1926[27] letters

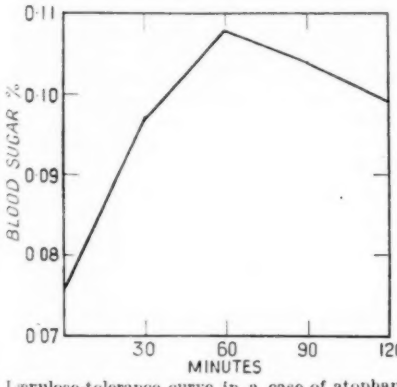
appeared from Dr. W. Langdon Brown, Dr. Geoffrey Evans, Dr. C. Worster-Drought and myself calling attention to the numerous cases of toxic jaundice, some of them fatal, which had resulted from the use of this group of drugs. Similar observations have been made in America.[28] Mr. H. Dickson Wright tells me that he attended a clinical meeting at the Mayo Clinic in August, 1930, when five cases of deep jaundice following the taking of quinophan were exhibited. Such jaundice lasts for several weeks. For some days it is obstructive in type, the stools being clay-coloured and the urine containing excess of bile-pigments. The gall-bladder is not enlarged, the obstruction being intrahepatic and due to the hepatitis caused by the drug. The liver is considerably enlarged during the jaundice stage, but the spleen is not. The jaundice persists for many days after the stools regain their normal colour; the van den Bergh reaction is marked and biphasic. In some cases premonitory warning symptoms occur. In a fatal case quoted from the Mayo Clinic reports, marked pruritus occurred during the administration of the drug and was controlled by soda baths.

The following is a typical case which was seen by me in consultation with Dr. D. Y. Buchanan at the Ealing Hospital:—

CASE 19.—A man, aged 35, was admitted to hospital on Feb. 4th, 1929. Two tubes of atophan tablets had been taken in November and December, 1928. On Jan. 26th jaundice developed and became deep, and lasted until March 20th, 1929. The stools were pale for the first week and afterwards became normal in colour. The urine contained bile-pigments and bile-salts. The van den Bergh reaction on Feb. 6th was biphasic and 75 units. The patient made a good recovery and is in good health at the present time. There was a period of at least four weeks between the cessation of the taking of the atophan and the onset of the jaundice.

CASE 20.—As an example of fatal cases may be quoted that of a man, aged 69, who took atophan, grs. 5 t.d.s., for six days from July 10th to 16th, 1925. On August 8th he developed rapidly deepening jaundice. The liver was enlarged. The stools were pale for a few days only. On August 31st typical symptoms of acute necrosis of the liver occurred, the patient dying on Sept. 5th. During the last few days the urine contained a trace of albumin and epithelial and granular casts.

FIG. 3.



Lævulose-tolerance curve in a case of atophan jaundice due to taking "Gorum cachets" (dose of lævulose 50 g.).

Two cases of toxic jaundice following the taking of "Gorum" cachets have recently been under my care.

CASE 21.—A woman, aged 70, developed on July 7th, 1930, quickly deepening jaundice about three weeks after a course of Gorum cachets (two daily for six days). The jaundice was of toxic type. The van den Bergh reaction was biphasic and 160 units on July 29th. Ascites developed on August 19th, severe hæmatemesis on Sept. 8th, and death occurred on the 10th. There was no history of alcoholism in this case. The hepatic cirrhosis was no doubt the result of the hepatitis following the quinophan in the Gorum cachets.

CASE 22.—A woman, aged 52, took Gorum cachets t.d.s. from Nov. 12th to Dec. 3rd, 1930, and also t.d.s. from Dec. 10th to 24th, 1930. On Feb. 1st, 1931, jaundice developed and rapidly deepened. Vomiting occurred Feb. 4th. No abdominal pain. On Feb. 28th, 1931, the liver was enlarged, reaching 2 in. below right subcostal border; surface smooth. Urine contained much bile-pigments and some bile-salts; stools pale Feb. 25th–28th; afterwards colour returned and became normal on March 6th. On March 4th, 1931, van den Bergh test was direct positive bilirubin, units 98. The lævulose-tolerance test (Fig. 3) showed a marked positive reaction for hepatic insufficiency. Dr. J. D. Robertson kindly carried out the investigations in this case. The patient has been suffering from typical toxic jaundice. On March 13th the liver was reduced in size, the jaundice was clearing, and the patient making good progress towards recovery. On the 23rd she was well apart from some remaining jaundice, the liver being normal in size.

The striking feature about the quinophan cases of toxic jaundice is the marked depth of the jaundice and the absence of any marked anæmia. A marked hepatitis seems to be caused and there is danger of obstructive cirrhosis. It appears that in these cases age is an important predisposition to severity of action of the drug, and for this reason I think that there is danger in its use in persons over the age of 50.

AROMATIC ORGANIC COMPOUNDS.

Trinitrotoluene.—This substance, T.N.T., was used very largely during the war as an explosive, and munition workers were employed on filling shells with it. Numerous fatal cases of toxic jaundice, due to the necrosis of the liver caused by the substance, have been recorded, and several such cases have been under my personal observation.

Two very prolonged cases are worthy of record.

CASE 23.—A woman, aged 32, was admitted into St. Mary's Hospital on July 16th, 1926, under my care. She had been employed in a T.N.T. factory in 1915 and had developed toxic jaundice while working there. She had been in poor health since, suffering from abdominal discomfort and nausea. The liver was enlarged, and there was slight jaundice. She was readmitted to hospital on Nov. 9th, 1926. The lævulose test showed hepatic deficiency. Ascites developed, and paracentesis was performed on Nov. 26th and Dec. 16th. She was readmitted to hospital on Sept. 8th, 1927, with ascites and jaundice; paracentesis yielded 31 pints. She was readmitted on Oct. 22nd, 1927, with ascites and jaundice; paracentesis yielded 22 pints. She died in December, 1927. There was no history of alcoholism or syphilis. The cause of death was progressive hepatitis set up by T.N.T. poisoning in 1915.

A similar remarkable case (Case 9) was kindly reported to me by Dr. Pulvertaft, of St. Thomas's Hospital. A woman suffered from toxic jaundice while working in a T.N.T. factory in 1918. She developed ascites in December, 1927, and died early in February, 1928.

Post-mortem examination showed chronic hepatitis with cirrhosis and more recent yellow atrophy. The sections on microscopical examination showed much fibrosis and many giant cells due to the chronic hepatitis, and also necrosis of the remaining liver cells. In this case the cause of death was no doubt progressive hepatitis set up by the T.N.T. poisoning.

As mentioned in my first lecture cases of jaundice have followed T.N.T. poisoning after an interval of as long as nine months from last exposure.

Dinitrobenzene, *dinitrophenol* and *picric acid* have all given rise to toxic jaundice of similar type to that caused by trinitrotoluene.

Toluylenediamine and phenylhydrazine have been used for the production of toxic jaundice in dogs for research purposes. Dr. William Hunter showed that toluylenediamine in dogs had a specific effect on the intrahepatic bile capillaries, causing intrahepatic obstruction and deep jaundice. These experiments have an important bearing on the jaundice following the atophan group of poisons and the arsenobenzol compounds.

Inorganic Arsenic Compounds.—In a paper read before the Medico-Legal Society in July, 1922,[29] I pointed out that toxic jaundice was common in acute

arsenical poisoning. Recent examples of this have been furnished by the symptoms of the deceased in the Armstrong case, the Greenwood case, and the Pace case.

Arseniuretted Hydrogen.—This gas is intensely poisonous; it destroys the red blood corpuscles and also produces necrosis of the liver cells. A very interesting and detailed account was published by Dr. J. Dixon Mann and Dr. J. Grey Clegg [30] of five fatal cases in which marked hæmorrhage (hæmaturia, &c.) occurred with jaundice and death from acute necrosis of the liver.

Antimony compounds, inorganic and organic, may cause toxic jaundice in a similar manner to the corresponding arsenic compounds.

Phosphorus is an intense liver poison, causing death rapidly from acute necrosis of the hepatic cells with toxic jaundice. Case 1 is a typical example.

ALCOHOL.

It is universally agreed that the action of alcohol in large doses causes marked fatty degeneration of the liver cells. In some cases the enlargement of the liver is great and the organ of a marked yellow colour, the appearance resembling that seen in fatal cases of acidosis, or delayed chloroform poisoning in children. In this type of case vomiting may be a very marked feature, so much so as to give rise to the suspicion of irritant poisoning.

An interesting case of this type was investigated by me on behalf of the Home Office in 1909.

CASE 24.—A man, aged 50, had been ill in bed for four weeks in the country; the chief symptoms were vomiting of a very persistent character and some diarrhœa. Slight jaundice was present. Death resulted after four weeks' illness, the patient passing into stupor delirium and coma with the usual symptoms of hypohepatism. A few days before death the urine was sent to a local pharmacist for analysis, and very large mirrors of arsenic were obtained after the application of the Marsh-Berzelius test. The wife was suspected of administering arsenic, and the stage was set for another Maybrick case.

The viscera were examined by me. No arsenic was present in any of them. The liver was very enlarged, and had the usual canary-yellow appearance associated with a very marked degree of fatty change. It was typical of the fatty liver found in some cases of alcoholism. The history showed that the deceased had consumed large quantities of whisky for some time and that this consumption had continued throughout his terminal illness. An inquest was held and I was submitted to a severe cross-examination by the coroner. It was clear that the arsenic found in the urine had arisen from the use of impure chemicals containing arsenic. The suspicion of arsenical poisoning was effectively disposed of by my evidence. The cause of death was liver degeneration from alcoholism.

In a few cases acute alcoholic excess has given rise to acute necrosis of the liver with its accompanying group of fatal symptoms. It is clear that in most cases of hepatic cirrhosis alcohol plays a predisposing part, permitting the passage of toxins of bacterial origin through the gastro-intestinal mucous membrane and so on to the liver. It appears that it is these toxins and not the alcohol which cause the progressive hepatic fibrosis.

It must also be borne in mind that cirrhosis of the liver not infrequently occurs in persons who have never taken alcohol. There are many chemical agents other than alcohol which will cause cirrhosis of the liver and also many infective causes, such as chronic intestinal infection, syphilis, and bilharziasis. This being so, it cannot be too strongly emphasised that in cases where death is due to cirrhosis of the liver the cause of death should be regarded as "natural" unless the contrary is proved. The custom of holding an inquest as a matter of routine in cases of cirrhosis of the liver is, in my opinion, contrary to the most modern views of pathological knowledge regarding the cause of this condition, and is a custom which should be discontinued. Needless publicity of a character most painful to the relatives of the deceased is thereby caused to no purpose.

It must, however, be admitted that occasionally a rapidly acute cirrhosis of the liver of virulent type may be set up by alcoholic drinks. Several such cases have been recently reported where death has resulted from what must be regarded as alcoholic poisoning. The drink in question is known as Lisbon wine, and is undoubtedly a very toxic form of alcohol which resembles port wine in colour, though not in taste. It is known in the south and east of London as Red Lizzie. It causes very acute alcoholic intoxication and many deaths have resulted from its consumption. Mr. A. Douglas Cowburn, H.M. coroner for South London, has informed me that he has recently held inquests on several fatal cases of alcoholic poisoning from Lisbon wine.

One such case was under my care at St. Mary's Hospital recently and is worthy of record.

CASE 25.—A male, aged 34, married, was admitted on May 5th, 1930. On admission toxic jaundice and ascites were present. The patient stated that for the last six months he had drunk a bottle of Lisbon wine a day; before that time he had been a beer drinker for four years. This statement was confirmed by his wife. The van den Bergh reaction was biphasic, the icterus index was 54 units, and the blood-urea 21 mg. per 100 c.cm. The Wassermann reaction was negative. On May 24th paracentesis abdominis yielded 15 pints; the fluid was of greenish colour and turbid. On May 28th paracentesis yielded 10 pints, and on May 31st 10½ pints. On June 6th the abdomen was opened by Prof. C. A. Pannett and a condition of acute hepatic cirrhosis was found; the ascitic fluid contained streptococci which had no doubt set up a mild infection from the intestinal organisms. No bowel perforation was present.

This case was obviously one in which official inquiry was required. It was reported to the coroner and post-mortem examination by Sir Bernard Spilsbury showed that a very acute active cirrhosis of the liver was the cause of death.

This case was one of acute cirrhosis of the liver caused by the consumption of a very toxic and bad form of alcoholic drink which was taken right up to the time of the onset of the symptoms. It is an example of the type of case of cirrhosis of the liver which should be reported to the coroner and for which a death certificate should not be given.

In my opinion the decision as to whether a fatal case of cirrhosis of the liver should be regarded as being due to natural causes or the direct result of alcoholic poisoning can only be decided upon by the medical practitioner in charge of the case, and he would be wise, if necessary, to obtain expert medical advice on the point.

VARIOUS OTHER POISONS.

Lead.—Lead poisoning, as ordinarily occurring from industrial or accidental causes, is not definitely associated with toxic jaundice. The intravenous use of lead preparations in the treatment of cancer has shown that toxic jaundice is a danger to be looked for and guarded against.[31]

Synthalin.—An alkylguanidine derivative which was introduced a few years ago as a possible substitute for insulin in the treatment of diabetes has been found in some cases to have a definite toxic action on the liver, and toxic jaundice has been observed after its use.

Mushroom Poisoning.—Poisonous fungi eaten in mistake for edible mushrooms produce acute gastro-intestinal irritation and intense degeneration of the liver cells with marked fatty change in them. The symptoms are those of acute auto-intoxication due to arrest of liver function and are often associated with hæmorrhages. Toxic jaundice is sometimes

seen, but death may occur before it has time to become manifest. The post-mortem appearance of the liver resembles that of the enlarged fatty liver seen in phosphorus poisoning or in the delayed chloroform poisoning of children. Common poisonous varieties of mushrooms are *Amanita phalloides*, *A. verna*, and *A. muscaria*.

Snake Bite.—The venom of snakes of the viper order causes a very marked local extravasation of blood which may involve a large area around the bite. Local and sometimes general jaundice may occur after the bites of such snakes.

CASE 26.—On May 30th, 1930, I saw an interesting case of adder bite in a boy, aged 8, who had been bitten on the right middle and ring fingers the previous day. Much faintness and collapse occurred a few minutes afterwards and for 12 hours vomiting and diarrhœa occurred. Blebs containing pink serum appeared at the site of the bites. The whole of the right hand, forearm, arm, and right side of the chest became swollen with blue mottled areas due to superficial hæmorrhages. The swollen area after three days took on a yellowish colour and the swelling gradually subsided. Local but no general jaundice resulted. The boy made a good recovery.

In this case the blood was tested on June 3rd by Dr. Alexander Fleming. The coagulation time was normal and the fragility test of the red corpuscles was normal. The poison appeared to have a powerful hæmolytic action on the red blood cells with which it came in contact and the hæmorrhagic areas in the arms were most marked along the course of the lymphatics along which the poison would be carried up the limb.

Mercurochrome—sodium dibromoxymercuryfluorescein—has been extensively used in the treatment of obscure septicæmic condition. J. H. Burn [32] has shown that samples from different manufacturers vary greatly as regards toxicity. Some samples were three times as toxic as others. This drug while acting more especially on the kidneys and colon must also have a toxic action on the liver and give rise to the risk of toxic jaundice.

Acriflavine.—E. R. Cullinan [33] has called attention to the occurrence of toxic jaundice after the administration of acriflavine. He quotes a case where, after the oral administration of gr. ½ 4-hourly for two months, jaundice developed. Death occurred 14 days later from acute necrosis of the liver. He referred to the experience of Major D. H. Murray who found in 118 cases to which intravenous injections of acriflavine had been given, 11 per cent. developed jaundice. One of these cases died from acute hepatic necrosis. In 1925 Meleney and Zau [34] showed that 0·025 g. per kg. of acriflavine of body-weight killed rabbits in six days. Acute degenerative lesions of the liver and kidneys were found after death. Cullinan's conclusion was that with acriflavine or its derivatives, whether given by the mouth or intravenously, there was a danger of producing toxic jaundice.

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EFFECT OF
BRAIN DIET IN PERNICIOUS ANÆMIA.*

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SINCE Minot and Murphy [1–4] first demonstrated that liver contained material effective in pernicious anæmia, it has been found that other organs are potent in this disease. These investigators also found that kidney was effective, an observation which has been confirmed by McCann [5] and others. In a series of experiments, Castle [6–8] has shown that potent material arises after interaction of beef muscle with normal human gastric juice. On the basis of this work, and after confirming the observation in one case, Ungley [9] gave a diet of raw sheep's stomach to two patients with pernicious anæmia, with a resulting reticulocyte response; and Sturgis and Isaacs,[10 11] Conner,[12 13] and Wilkinson,[14 15] working independently, have clearly demonstrated the potency for pernicious anæmia of hog's stomach. The effectiveness of stomach tissue, however, does not necessarily indicate that the responsible factor is present during life; it is possible that its presence results from a post-mortem interaction between the intrinsic factor and the protein of the stomach wall.[8 10]

It would seem that the specific factor is synthesised in the gastro-intestinal tract, and that the liver, kidney, and possibly other organs act merely as storehouses.[8 9]

Although Minot and Murphy [1] noted neurological improvement in their cases, there has since been considerable difference of opinion amongst other observers as to the efficacy of liver and liver extract therapy with regard to the symptoms resulting from damage to the nervous system. The results obtained in the series of cases reported by Ungley and Suzman,[16] by Baker, Bordley, and Longcope,[17] and by Suzman,[18] as well as by other physicians,[19] show that whole liver in adequate amounts is effective in the majority of cases.

In analysing our results, Suzman and I stated: "It appears that the beneficial effect of liver on the nervous system is a specific phenomenon, and not the result of the maintenance of the red cell count at a high level, nor of improvement in the general condition."[16] So far as we are aware, there is no evidence at present that refined commercial extracts will produce similar neurological benefit, although it is possible that such effects might follow the prolonged administration of large amounts. As suggested

* From the Royal Victoria Infirmary, Newcastle-upon-Tyne.

(*Continued from previous column.*)

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formerly,[9] there is perhaps a factor which favourably affects the neurological phenomena separate from the one which influences the regeneration of blood. The existence of two such independent factors could be determined in several ways, one of which would be to treat a series of patients for a prolonged period of time with the crystalline compound isolated from liver by West and Howe,[20] which is at least very potent for blood regeneration. Such a procedure is not possible at present owing to the difficulty and cost of producing the substance. Another method of approaching the matter is presented below.

The lesions in the nervous system are probably the result of a conditioned deficiency [16] just as is the anæmia.[8 21 22] Histological changes in the cord very similar to those in the subacute combined degeneration of pernicious anæmia may occur in pellagra, lathyrism, ergotism, beri-beri, and possibly sprue. Moreover, there is experimental evidence which tends to uphold this deficiency theory. Following Cowgill's original work,[23] Gildea, Kattwinkel, and Castle [24] have produced in dogs changes considered to resemble combined system disease in man by means of a diet deficient in the antineuritic vitamin B (B_1 or F). On the other hand, Mellanby [25 26] has observed cord degeneration similar to that in pernicious anæmia in dogs fed on a diet rich in cereal, but lacking vitamin A. Mellanby [26] discusses the possibility that the beneficial effects produced by whole liver in subacute combined degeneration may be due to the fat-soluble part of liver. In any event, it seems probable that the regression of neurological symptoms and signs which follows adequate liver therapy is the result, at least in part, of supplying sufficient quantities of a material that can favourably affect the damaged nervous tissue.

Knowing the degree of effect which liver produces upon the anæmia and upon the neurological phenomena, the ratio of these effects to each other may be used as a standard for comparison. Thus, if it were found that the ratio of the effect upon the nervous system to the effect upon the bone-marrow was markedly different following the administration of an organ other than liver, the existence of two separate factors could reasonably be inferred. It seemed logical to suppose that in nervous tissue one might find both factors, with perhaps a relatively large proportion of the substance beneficial to the neurological condition. For this reason experiments were commenced with a diet of brain.

Clinical Experiments.

The first step was to ascertain whether the blood-regenerative factor was present in brain; the second to determine the effectiveness or otherwise of brain in the treatment of the neurological phenomena.

Method.—Whole bullock's or sheep's brains were used in amounts of 240 to 480 g. (½ lb. to 1 lb.) daily. The material was obtained fresh daily as far as possible, minced, and fed raw. It has been found to be most palatable as a purée with orange juice, ginger ale, or broth, or as a jelly. Desiccated brain (Oxo Ltd.) was administered in three cases, two of which are reported here. In the third, its use was discontinued after a few days because of bowel disturbances and diarrhœa.

As a rule the brain was taken without difficulty. No liver, liver extracts, nor any other known potent material was given during the period of administration of brain.

The results obtained in four cases of pernicious anæmia and in three cases of simple achlorhydric anæmia will now be described.

CASE RECORDS.

CASE 1.—A widow, aged 44, entered hospital with typical pernicious anæmia. The duration of symptoms referable to anæmia was 20 months. For six months there had been weakness of the legs and paræsthesiæ of the extremities. Numbness and tingling involved the fingers and the lower limbs as far up as the knees. She had not had liver therapy at any time. Neurological examination showed some impairment of coördination of the lower limbs without evidence of pyramidal tract involvement.

Following the daily administration of 240 g. of ox brain there occurred the hæmopoietic response illustrated in Fig. 1. Subjective improvement was noticeable by the third week. At the end of 58 days numbness and tingling had disappeared except in the ends of the toes.

An attempt was made to raise the red cell count to five million with brain alone. However, after leaving the hospital, the patient had difficulty in obtaining enough of the substance, and supplemented it with liver. From the Chart (Fig. 1) it will be observed that the red cells increased more rapidly with this diet, which consisted of two pounds of liver and one half-pound of brain a week.

CASE 2.—Male, aged 47, had pernicious anæmia and subacute combined degeneration of 15 months' duration. Numbness and tingling involved the distal one-third of the fingers and the soles of the feet. His gait was slightly ataxic and neurological examination showed considerable involvement of both lateral and posterior columns of the spinal cord.

Before commencing brain diet, it was decided to observe the effect, if any, of vitamin B on the neurological condition in view of the work [23 24] already mentioned. Vitamin B was given in the form of detoxicated embryo of wheat, (Bemax) in doses of 270 g. daily. During this period there occurred an increase of reticulocytes, of mature red cells, and of hæmoglobin, to be discussed further on (Fig. 2).

There was some increased sense of well-being, though less than that which occurs with liver therapy. Paræsthesiæ were unaffected and there was no significant neurological change.

Desiccated brain (Oxo Ltd.) was now commenced in doses of 3·2 oz. daily. This amount is that derived from 1 lb. (480 g.) of whole ox brain. A small reticulocyte response followed, but at the end of 17 days the red cell level was practically unaltered (Fig. 2). The preparation was then discontinued owing to intestinal colic and diarrhœa. Numbness and tingling showed some improvement in degree, but no decrease in extent.

There was no special alteration of the neurological condition during the short period of desiccated brain therapy. Subjective improvement in well-being occurred after 10 or 11 days, but disappeared with the onset of bowel disturbances. The subsequent hæmopoietic response to liver is depicted in Fig. 2.

CASE 3.—A single woman, aged 39, entered hospital suffering from pernicious anæmia and advanced subacute combined degeneration. The disease commenced two years previously with soreness of the tongue and symptoms referable to anæmia. Numbness and tingling of the lower limbs up to the hips began soon afterwards. Ataxia, weakness, and stiffness of the legs developed and became progressively worse. Liver was taken infrequently and in inadequate amounts. For the past three months she had been bedridden, and unable to stand or walk.

Generalised bronchitis with œdema at the bases of the lungs was present on admission. She was markedly pale. Both upper and lower limbs showed evidence of gross pyramidal involvement. Coördination and joint sense were considerably impaired in the legs, with absence of vibration sense below the knees.

The increase of reticulocytes during the period of administration of desiccated brain is shown in Fig. 3. The preparation was discontinued after 12 days because of vomiting. No subjective improvement occurred, nor was there any significant increase of red cells during this period. The subsequent administration of extract (Liveroid) derived from 360 g. of whole liver produced a satisfactory hæmopoietic response (Fig. 3).

CASE 4.—A widow, aged 47, had pernicious anæmia with spinal cord symptoms. The onset was sudden, 16 weeks before entry. Neurological examination showed evidence of

pyramidal and posterior column involvement affecting both upper and lower limbs. Her gait was grossly ataxic.

The effect of brain diet upon blood regeneration is illustrated in Fig. 4. Slight subjective improvement in the legs was noted after the tenth day. Liver therapy was substituted at the end of 18 days. On the second day the legs became weaker. Acute fibrinous pleurisy developed on the tenth day, and acute phlebitis of the left femoral vein ten days later. Retention of urine followed, and the urine became loaded with pus. These complications were accompanied by considerable fever and leucocytosis, and ended fatally.

Necropsy showed thrombosis of both femoral veins, extending to the inferior vena cava, and occlusion of the right pulmonary artery with clot, possibly embolic in origin. The spinal cord was the seat of subacute combined degeneration. Microscopically there was in addition to degeneration of the myelin some increase of glial cells and of fibrous glia.†

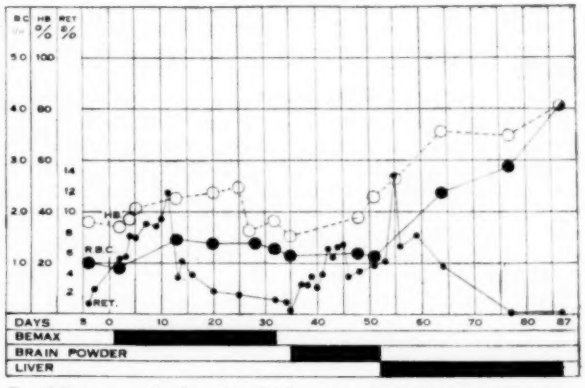
CASE 5.—A married woman, aged 39, suffered from "secondary" anæmia of three years' duration. There was no history of hæmorrhage and no apparent cause for the anæmia apart from a complete achlorhydria. The tongue was pale and clean with atrophy of the papillæ around the edges. The spleen was easily palpable on inspiration. Neurological examination was negative.

Blood examination showed an anæmia of "secondary" type, with marked achromia and moderate anisocytosis and poikilocytosis. The average diameter of the red cells was 6·6 μ (median), with 1·5 μ (dispersion).‡

The effect of brain diet is illustrated in Fig. 5. There was some subjective improvement after the eight days. From the twentieth day onwards the patient failed to take full amounts of the brain owing to gastric symptoms.

The administration of 240 g. of brain daily for a period of 20 days produced no significant alteration of the blood picture. Numbness and tingling of the extremities disappeared, however.

FIG. 2 (Case 2).



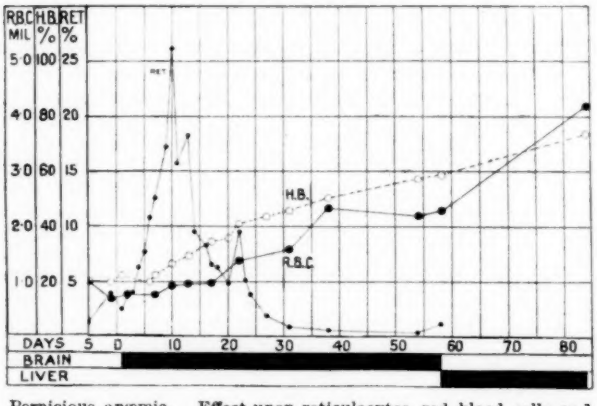
Pernicious anæmia, showing: (*a*) Increase of reticulocytes to 11·8 per cent. during the administration of detoxicated embryo of wheat, 270 g. daily. Initial red cell count 1·02 millions per. c.mm. with 36 per cent. hæmoglobin. Rise of red cells to 1·4 million per c.mm. and to 48 per cent. hæmoglobin in 20 days. Subsequent fall of hæmoglobin following diarrhœa of several days' duration. (*b*) Second reticulocyte response of 6·8 per cent. on the eleventh day from desiccated brain derived from 480 g. of fresh tissue. No significant increase of red cells in 17 days above the initial count of 1·15 millions per c.mm. (*c*) Tertiary reticulocyte response of 13·4 per cent. on the fourth day after feeding daily 240 g. of liver with extract (Liveroid) derived from a similar amount. Rapid increase of red cells and hæmoglobin.

CASE 6.—A married woman, aged 39, gave a history of anæmia of three years' duration. Symptoms included sore tongue, slight dysphagia, and numbness of the hands and feet. An atrophic glossitis was present, and there was complete achlorhydria. The spleen was not palpable. Blood examination showed an anæmia of "secondary" type with 2·43 million red cells and 40 per cent. hæmoglobin (Sahli-Leitz); the erythrocytes were somewhat achromic with moderate anisocytosis and poikilocytosis, platelets numerous. The average red cell diameter was 7·5 μ (median) with 1·5 μ (dispersion).

CASE 7.—A widow, aged 39, gave a history of anæmia following severe menstrual hæmorrhage a month previously. There was no glossitis and no history of sore tongue or paræsthesiæ. The spleen was just palpable. Gastric analysis after histamine showed complete absence of free hydrochloric acid and pepsin. The erythrocytes which numbered 2·16 million per c.mm. with 30 per cent. hæmoglobin, showed marked anisocytosis, poikilocytosis, and some achromia. The average diameter of the red cells was 7·0 μ (median) with 1·5 μ (dispersion).

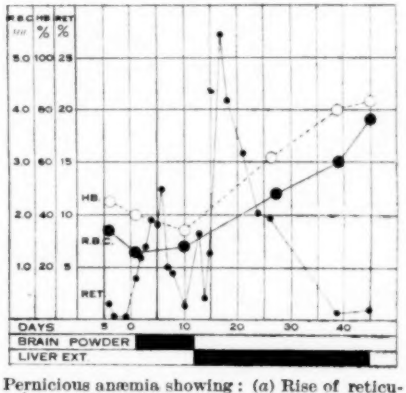
Ox brain, 240 g. daily, was given for 20 days without any hæmopoietic response.

FIG. 1 (Case 1).



Pernicious anæmia. Effect upon reticulocytes, red blood cells, and hæmoglobin of feeding daily 240 g. of raw brain. In this and the following charts, Ret. = percentage of reticulocytes, Hb. = hæmoglobin percentage (Sahli-Leitz), R.B.C. = red blood cells per c.mm., in millions.

FIG. 3 (Case 3).



Pernicious anæmia showing: (*a*) Rise of reticulocytes to 12·4 per cent. on the sixth day during the administration of desiccated brain derived from 480 g. of fresh substance. (*b*) Secondary reticulocyte response to 27·2 per cent. on the fifth day, with rapid increase of red cells and hæmoglobin due to extract (Liveroid) derived from 360 g. of whole liver.

Comment.

Although not directly concerned with the subject of this article, it is interesting to note the

† Although such glial increase is exceptional in an untreated case, Davison [27] states that it is the usual finding in patients who have had liver therapy.

‡ As measured by ocular micrometer, and using a stained smear mounted in balsam. By this method the normal median is 7·8 μ to 7·9 μ with a dispersion of 1·0 μ.[28]

hæmopoietic response in Case 2 during the administration of detoxicated wheat embryo. The observation needs confirmation before conclusions can be drawn. The reticulocytes were already rising when the vitamin B preparation was first given, so that the possibility of a spontaneous remission cannot be excluded. Minot and Murphy [2] have reported a case of pernicious anæmia in which the administration of extract of wheat embryo produced no demonstrable effect.

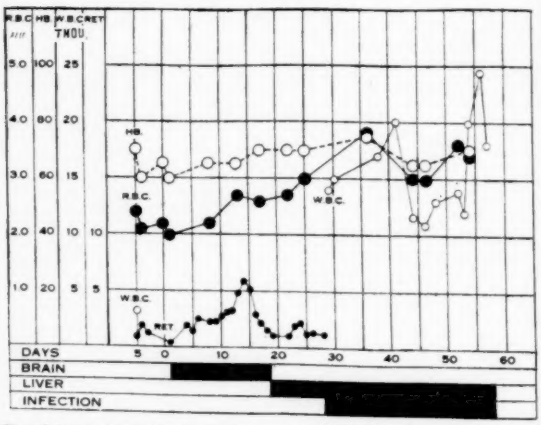
Discussion.

From the results obtained in the four cases of pernicious anæmia described above, it appears that brain contains a substance effective for blood regeneration in this disease. By comparing the reticulocyte response and the rate of red cell increase with those which follow liver in similar amounts,[3 4] one may estimate the hæmopoietic potency of brain relative to that of liver.

Thus in Case 1, the expected reticulocyte rise from 240 g. of whole liver, with an initial red cell count of 770,000 per c.mm. is about 40 per cent. The calculated amount of liver required to give the obtained reticulocyte response of about 20 per cent. is roughly 130 g. The increase of red cells is less than could be expected in 30 days from 240 g. of liver—i.e., 0·9 as against 2·0 millions. The estimated quantity of liver which would give an increase of 0·9 million in 30 days is about 120 g.

The reticulocyte rise which occurred in Case 2 following powder derived from 480 g. of fresh brain was only 6·8 per cent. compared to the rise of 40 per cent. to be expected from 480 g. of whole liver at a similar red cell level. The estimated amount of liver which would give a reticulocyte response of 6·8 per cent. at the same red cell level is roughly 80 g. It is possible that some of the effective substance in brain was lost during the process of desiccation. The rapid rise of red cells with a tertiary peak of reticulocytes, which followed an equivalent amount of liver and liver extract, indicate in the latter a much greater potency for blood regeneration.

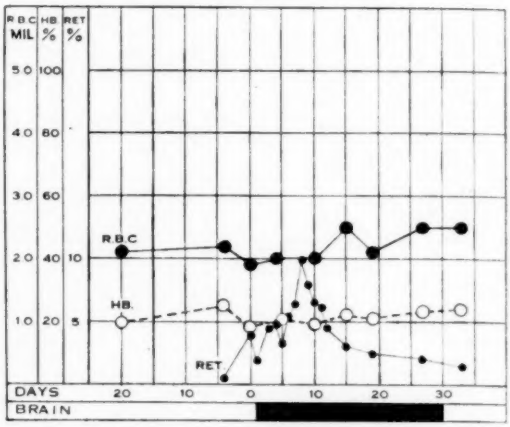
FIG. 4 (Case 4).



Pernicious anæmia showing: (*a*) Reticulocyte response of 5·9 per cent. on the fourteenth day of brain diet. The initial dose of 240 g. was increased to 480 g. on the fourth day. In 18 days the red cell count increased from 2·03 millions to 2·61 millions per c.mm. and the hæmoglobin from 60 per cent. to 70 per cent. (Sahli-Leitz). (*b*) Small secondary rise of reticulocytes to 2·1 per cent. on the sixth day from raw liver 240 g. (increased to 480 g. after six days) and liver extract No. 343 (N.N.R.) derived from 300 g. daily. The case was complicated by infection with accompanying fever and leucocytosis (W.B.C. = white blood cells in thousands.)

In Case 3 desiccated brain was also used. The expected reticulocyte rise from 480 g. of whole liver at a red cell level of 1·27 millions per c.mm. is about 35 per cent.; the amount of liver which would be required to produce the obtained reticulocyte response of about 12 per cent. at the same red cell level is approximately 140 g.

FIG. 5 (Case 5).



Simple achlorhydric anæmia: Reticulocyte response to 9·8 per cent. on the eighth day following 240 g. of raw ox brain daily. Rise of red cells from 1·89 to 2·5 millions per c.mm. but no increase of hæmoglobin.

In evaluating the reticulocyte responses in Case 4, it is necessary to make allowance for the presence of sepsis. Although the response to brain was small and delayed until the fourteenth day, the subsequent secondary rise with liver therapy was also small and less than would be expected. The estimated amount of liver required to produce a reticulocyte response of 5·9 per cent. at a red cell level of 2 million per c.mm. is 120 g., which amount would also be enough to give the rise of 0·6 million red cells per c.mm. obtained in 18 days with brain.

Taking these four cases together, and allowing for certain factors already mentioned, one may estimate the hæmopoietic potency of ox brain in pernicious anæmia as approximately one-third that of ox liver.

The effect of brain on blood regeneration in simple achlorhydric anæmia was mildly positive in one case and negative in two others. It is interesting to note that in Case 5 the red cell count rose without any increase of hæmoglobin. Similar dissociation of response may occur when cases of this type are treated with liver extract; the hæmoglobin percentage may fail to rise until iron is substituted or added.[18]

It now remains to assess the value of brain feeding in subacute combined degeneration of the cord. Whereas for the determination of hæmopoietic potency there is a rapid measurable response it is much more difficult to estimate the effect of a therapeutic agent upon the neurological condition; the rate and degree of improvement are variable even in cases apparently similar and receiving identical treatment. The cases reported above give no positive information as to the effect of brain on the nervous system because the periods of observation were too short. The results so far obtained in a further group of patients with subacute combined degeneration of the cord suggest that its efficacy in this respect is perhaps as great as, and possibly greater than, that of liver. However, it will take many months before

it is possible to evaluate satisfactorily the potency of brain in the treatment of the neurological condition.

I wish to express my thanks to the members of the honorary staff of the Royal Victoria Infirmary, Newcastle-upon-Tyne, England, and particularly to Dr. George Hall and Dr. J. C. Spence, for the facilities they afforded me in this work. I am indebted also to Dr. M. M. Suzman, who kindly carried out at the Massachusetts General Hospital the investigations in Case 2, and to Dr. J. H. Means for permission to publish that case.

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EOSINOPHILIA.

A RECORD OF THREE CASES.

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Except as a possible indication of the presence of intestinal parasites, very little attention is paid by the clinician to the percentage of eosinophil cells in the differential count of the leucocytes. An eosinophilia usually leads to a request for a search for parasites or their ova in the patient's stools, while an eosinopenia evokes no comment. This is not surprising, seeing that so little is known of the function of the eosinophil leucocytes. It has to be admitted that in many cases showing eosinophilia there is no explanation of the condition. In spite of frequent search for intestinal parasites or their ova, these have seldom been found in the cases examined at the London Temperance Hospital in recent years. Indeed, I can recall only one case where an eosinophilia of 11 per cent. in a youth led to the search for and discovery of parasites.

Of the ten cases shown in the Table the first five are probably examples of post-infective eosinophilia, which was accompanied by an increase of the lymphocytes and monocytes. The sixth case may have the same explanation, as the insertion of a foreign body—a piece of wood—would give rise to bacterial infection. Case 7 was possibly a reaction to protein poison from the disintegrating growth, while in Case 10 there may have been intestinal worms, which were not discovered in the laboratory. The first five cases indicate the prognostic importance of an eosinophilia, even if for diagnosis it proves of little value.

Table showing cases of Eosinophilia at the London Temperance Hospital, 1927–29.

Case.	Age.	Disease.	Number of leucocytes.	Percentage of eosinophil cells.
1	7	Empyema.	8,800	7
2	42	Gastric ulcer.	7,400	8
3	55	,, ,,	5,600	9
4	13	Subacute appendicitis	7,000	7
5	25	Rectal fistula.	10,200	17
6	51	Foreign body in rectum	7,600	8
7	35	Recurrent uterine carcinoma.	18,000	17
8	34	Abdominal lympho-sarcoma.	7,000	6
9	2½	Cirrhosis of liver.	14,400	8
10	20	Abdominal pain, history of worms, no ova found.	13,500	8·5

During the same period in which the cases in the Table were observed, three cases of marked eosinophilia were seen.

Case 1.—A railway-guard, aged 43, was first seen in the out-patient department on April 9th, 1926, and was admitted on April 18th, having a large painless swelling, due to enlarged lymphatic glands, occupying the upper part of the right anterior triangle and extending from just below the jaw to about 1½ in. above the clavicle. The swelling had first been noticed three months previously and had gradually enlarged and pushed the larynx 1 in. to the left of the mid-line. No enlarged glands were detected in the mediastinum or elsewhere, and the Wassermann reaction was negative. The patient suffered from a "rheumatic rash" on his body every spring, a dense papular rash being present on his loins and abdomen on admission.

Section of a gland removed from the neck had the appearance of lymphosarcoma rather than lymphadenoma but the diagnosis was doubtful. Treated with X rays the swelling ultimately disappeared completely.

The following were the results of the blood counts. April 9th: hæmoglobin, 9 per cent.; red cells, 4,520,000; white cells, 30,100; polymorphs, 28 per cent.; eosinophils, 48 per cent.; lymphocytes, 24 per cent.

April 19th: leucocytes, 9650; polymorphs, 48 per cent.; eosinophils, 20 per cent.; basophils, 3 per cent.; lymphocytes, 26 per cent.; large mononuclears, 3 per cent.

On April 30th the leucocytes had risen to 13,600 and the eosinophils to 41 per cent., falling again by May 5th to 12,000 with 14 per cent. of eosinophils.

The eosinophilia appeared to be associated with the skin eruption and disappeared when this subsided, some considerable time before the disappearance of the swelling in the neck. The patient entered the hospital again about a year later for an appendicectomy. No glandular swelling was detected at this time, but he died from a painful affection two years after he was first seen. Whether this affection was of the same nature as the original swelling has not been ascertained.

Case 2.—A single woman, aged 25, a hospital nurse, was admitted on March 21st, 1928. She had first noticed a lump in the left posterior triangle of the neck eight months before. For two months there had been a lump on the right side of the neck, and for two weeks a swelling in the left groin. She had lost weight during the last two or three months. Her mother and an aunt had died of consumption. Her brother and sister were alive and well.

She was a well-nourished woman weighing 7 st. 1¼ lb. There was a large mass of smooth adherent glands the size of an orange in the right posterior triangle. No axillary glands were felt, but there was a small smooth gland above Poupart's ligament on the left side. Enlarged glands were felt deeper down in the left iliac fossa. The tonsils were not enlarged. There was an impaired percussion note over the manubrium sterni with weak breath sounds on the left side. There was no enlargement of the liver and the spleen was not felt.

The temperature was normal and remained approximately so until three weeks later, when a gland was removed from the neck for examination, after which the temperature rose to 100°–101° for 48 hours, and then fell to about 99° again. Six weeks after admission there was remittent fever for 17 days rising to 102°–103°, and then for a week the fever was intermittent.

Examination of the gland removed revealed the picture of lymphadenoma—namely, increase of endothelial cells, with many giant cells with centrally placed nuclei and hypertrophy of the reticulum. Many eosinophil leucocytes could be seen. No tubercle bacilli were found in the sputum and no parasites or their ova in the stools. The Wassermann reaction was negative.

On March 22nd a blood count revealed a hæmoglobin percentage of 80; 4,470,000 red cells, and 33,700 white cells; polymorphs, 30 per cent.; eosinophils, 61 per cent.; basophils, 1 per cent.; lymphocytes, 3 per cent.; and large mononuclears, 5 per cent.

On April 4th the hæmoglobin was 80 per cent., the red cells 4,490,000, and the white cells 36,800, with polymorphs, 11·5 per cent.; eosinophils, 77·5 per cent.; basophils, 0·5 per cent.; lymphocytes, 8 per cent.; and large mononuclears, 2·5 per cent.

On May 2nd the hæmoglobin was 62 per cent., the red cells 3,730,000, and the white cells 37,800; with polymorphs, 8 per cent.; eosinophils, 84 per cent.; lymphocytes, 7 per cent.; and large mononuclears, 1 per cent.

On May 11th the white cell count was 56,000; the polymorphs, 12·5 per cent.; eosinophils, 84·5 per cent.; lymphocytes, 2·5 per cent.; and large mononuclears, 0·5 per cent.

On May 17th the white cell count was 106,800, with polymorphs, 27 per cent.; eosinophils, 67·5 per cent.; lymphocytes, 4·5 per cent.; large mononuclears, 1·5 per cent.

On May 25th the white cells numbered 84,600; with polymorphs, 7 per cent.; eosinophils, 88 per cent.; lymphocytes, 4 per cent.; and large mononuclears, 1 per cent.

The patient died two or three months after leaving hospital, which she did at her own request.

There was no obvious explanation of either the excessive leucocytosis or the marked eosinophilia. G. L. Gulland and A. Goodall [1] state that in Hodgkin's disease there is usually a slight leucocytosis due to an increase of the polymorphonuclear cells, rarely beyond 15,000, but record a case with 61,000. Of eosinophilia they say "occasionally there is eosinophilia of from 4–10 per cent., rarely more," while according to V. Schilling [2] eosinophilia is not regularly present, and when it occurs is only slight. Strisower reported [3] a case in which there were 43 per cent. of eosinophils in the blood. Piney maintains that "Eosinophilia of well-marked character is not very common, but may reach quite considerable figures; usually this occurs in company with well-marked leucocytosis."

CASE 3.—A married woman, aged 39, suffering from uterine fibroids, was admitted on Nov. 26th, 1927. She had suffered from anæmia for 20 years. Her present illness had begun six weeks previously. She looked very anæmic, with pale conjunctivæ, lips, and palate, and was very short of breath. No glandular enlargement was found, with the exception of two slightly enlarged cervical glands. The spleen extended 3 in. below the costal margin, and the liver 3¼ in. A test-meal revealed no free hydrochloric acid. The stool contained no occult blood, parasites, or ova. The Wassermann reaction was positive ++.

A blood count taken on Nov. 28th showed a colour-index of 0·5, and a hæmoglobin percentage of 15. The red cells numbered 1,500,000 and the white cells 4200, with polymorphs, 26 per cent.; eosinophils, 35 per cent.; basophils, 1 per cent.; lymphocytes, 35 per cent.; and large mononuclears, 3 per cent. Poikilocytosis was present.

The diagnosis made was severe secondary anæmia. After a course of novarsenobillon injections with treatment directed to the improvement of the anæmia, the following blood count was obtained on Feb. 14th, 1928: hæmoglobin, 65 per cent.; colour-index, 0·56; red cells, 5,770,000; white cells, 4200; polymorphs, 58 per cent.; eosinophils, 11 per cent.; lymphocytes, 31 per cent.; and large mononuclear, 2 per cent.

The anæmia in this case was no doubt due to the syphilitic infection.

That in its tertiary stage syphilis may cause a severe anæmia of the pernicious type is, perhaps, not sufficiently recognised. The eosinophilia is unusual, but A. Piney [4] refers to an eosinophilic congenital syphilitic anæmia, which is accompanied by great increase of eosinophils, and although it is not known whether the case here reported suffered from congenital syphilis—and there may, indeed, be little ground for such a supposition—careful investigation would probably bring to light other cases of anæmia in tertiary syphilis associated with eosinophilia.

The eosinophilia present in each of these three cases was of an exceptionally high degree. Thus the highest percentage of eosinophils in the Table appearing in V. Schilling's "The Blood Picture" is 19 per cent. in a case of eczema with a normal number of leucocytes and in a case of peritoneal carcinoma. In the second case above reported both the leucocytosis and the eosinophilia are almost unbelievably high, probably higher as regards the eosinophilia than has heretofore been recorded. In the photomicrograph of one of this patient's blood films ten of the eleven leucocytes present are certainly eosinophils, the eleventh is doubtful.

In conclusion, I desire to express my thanks to my colleagues at the London Temperance Hospital, Dr. Kevin Byrne and Mr. James McClure for permission to use the notes of these cases under their care.

[1] The Blood, 3rd ed., Edinburgh, 1925.
[2] The Blood Picture, London, 1929.
[3] Wien. klin. Woch., 1913, No. 1.
[4] Recent Advances in Hæmatology, London, 3rd ed., 1931, p. 248.

PSYCHOSIS IN OSTEITIS DEFORMANS.

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THE absence of mental symptoms in osteitis deformans has been commented upon since the classical description by Sir James Paget [1] in 1876. It is well known that in this disease the skull bones are involved with great frequency, and extensive alterations are produced both in the external configuration of the head and in the capacity and shape of the vault. These cranial deformities have been investigated in detail and classified by Léri,[2] who has also drawn attention to the frequent narrowing of various foramina, both neural and vascular. Briefly, it may be stated that, apart from the greater thickness, there is an increase in the breadth of the interior of the skull while the antero-posterior diameter is lengthened. The depth of the cranial cavity, however, is diminished and the base of the skull becomes flattened or in extreme cases convex.

Despite these well-recognised changes affecting the skull and its foramina, symptoms due to cranial nerve involvement are uncommon. Wyllie [3] has commented on this and has reported two cases of osteitis deformans of the skull with optic atrophy due to compression of the nerve at the optic foramen. Gregg,[4] quoted by Wyllie, has reported compression of cranial nerves causing neuralgias, paralyses, and disturbances of the special senses. Mental symptoms are equally rare. Paget himself wrote: "Even when the skull is highly thickened and all its bones exceedingly altered in structure, the mind remains clear." Cases of altered mentality and of true psychosis have, however, been recorded by Hann,[5] in this country, and more recently in America by Smith[6] and by Kaufman.[7]

In Smith's first case a 50-years' inmate of an asylum was found to have developed Paget's disease but the two conditions were not ætiologically related. The second case, a female aged 60, was confused, delusional, hallucinated, and emotionally unstable, and this condition was thought to have a more

direct relationship with Paget's disease and the arterio-sclerosis which accompanies it and which was present here to a marked degree.

Kaufman reported four cases, one of which was doubtful, being associated with a tumour of the cerebrum; the second, a female aged 53, developed psychotic symptoms of paranoid type at the age of 44 and later the changes of osteitis deformans were found in her skull and other bones; the third, a male aged 52, had gross neurological signs and a degenerative psychosis with similar bony disability; the fourth, a female aged 65 with typical Paget's disease of the skull, tibia, and femur, developed the simple deteriorating type of senile dementia.

Hann's case was one of osteitis deformans which showed mental deterioration during the last ten years of life. The bony condition was observed first in the right clavicle of the patient, a woman then aged 41. In ten years the condition advanced to affect obviously and in a classical way the legs, pelvis, arms, spine, and skull. Gross arterial degeneration was observed at this time and the patient began to complain of severe neuralgic pains in the limbs and intractable headache. Slowly, sight and hearing failed and mental symptoms made their appearance and progressed. At 63 cerebral apoplexy occurred; the patient was unconscious three weeks and then slowly recovered. Another such attack occurred at 65 and resulted in death. A partial post-mortem showed that the bony skull was thickened, soft, and reddish in colour. An unusual feature was the presence of numerous bony bosses projecting from the inner table of the vault and ranging from a walnut to a pea in size. Over them the dura was very adherent, and the grooves for the vessels deep. The brain and its vessels appeared normal to the naked eye. The vertex of this skull is preserved in the Museum of the Leeds Medical School and is figured in a text-book by Lawford Knaggs.[8]

In considering the clinical picture, which appears to be an early senile dementia, it is difficult to estimate how much mental deterioration can be related to the slow brain trauma of compression by the bony elevations on the one hand, and to cerebro-vascular degeneration on the other.

REPORT OF A CASE.

The patient was a male aged 63, a fitter by occupation. No familial neuropathic taint was discovered. He was admitted into the dermatological department of the Leeds General Infirmary under the care of Dr. J. T. Ingram. His complaint was of intense generalised itching; a feeling of pricking, especially over the scalp and face, and of "grit coming out of the eyebrows," and slight frontal headache of seven months' duration. His wife admitted that the patient had never been "quite right" and had not worked since the death of his only son four years before. He had developed very severe asthma at this time. Recently he had become a great trial to his friends and family doctor and on more than one occasion had threatened suicide. He had lost nearly 2 st. in weight.

The patient's appearance was somewhat striking: his head, especially the vertex, appeared large, and a superficial examination showed this to be due to bony elevations, particularly of his frontal and parietal bones. There was gross lichenification of the neck and scalp due to persistent rubbing, as a result of which the eyebrows had been entirely removed. Similar excoriations were present over the trunk, especially the shoulders, and a few on the thighs, and there were a few follicular scabbed papules of the scalp.

He described his symptoms intelligently. His attention was good, his memory fair, and his emotional state was on the depressed side. On being rather closely questioned, he elaborated a theory that the chronic irritation of his scalp was due to the presence of a fluid passing to and fro beneath it. He stated that these abnormal sensations, together with slight headache, had antedated the eruption by several months and had caused him to rub and scratch his scalp. He next developed the delusion that the lotions prescribed had got beneath the skin and left a sediment which felt like sand in a state of perpetual motion. He made little complaint of this, however, but was continually making furtive movements over the forehead and scalp which only served to perpetuate the chronic lichenification.

General examination showed a well-marked arcus senilis. The pupils were normal and the vision good. Ophthalmologic examination revealed retinal arterio-sclerosis. Hearing was normal, and the nervous system was otherwise normal. All the palpable vessels appeared to be thickened and degenerate. The pulse was regular. The systolic blood pressure was 155 and the diastolic 95. The heart, chest, and urine were normal. Radiological examination revealed Paget's disease affecting the skull-bones, pelvis, sacrum, and both femora. The blood and cerebro-spinal fluid Wassermann reactions were negative. The cerebro-spinal fluid was in other respects normal and the blood count was normal.

The patient continued with his delusion and developed several variants of it, but all with reference to abnormal sensations in the head and scalp.

INCIDENCE OF MENTAL CHANGES.

In order to investigate the frequency of mental changes a further 18 cases of Paget's disease of the skull, who had been in-patients at the Leeds General Infirmary during the past ten years, were investigated. None showed the slightest evidence of mental abnormality, nor were neurological signs suggesting compression of cranial nerves present, with one exception. This was a man who showed advanced disease of the skull-bones and had bilateral nerve deafness. Vision was good in all cases, and such minor changes as could be observed on ophthalmoscopic examination were not more than could be attributed to retinal arterio-sclerosis.

It is of interest to record that three cases in this series had developed sarcoma, one at the upper end of the left femur and a second over the right frontal eminence; the third, under the care of Dr. G. Watson, died of generalised sarcomatosis, the primary sarcomatous change occurring in the ileum with secondaries in the lungs and liver. Spontaneous fractures had occurred in four cases. In the case with sarcoma of the left femur a spontaneous fracture had occurred in the right femur three years before. A second case sustained a fracture of the upper third of the right tibia, the right humerus was affected in the third, while the fourth had a history of multiple fractures of long bones.

I am indebted to Dr. Ingram for permission to report this case and to the honorary physicians of the Leeds General Infirmary for allowing me to review their cases of osteitis deformans.

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PITUITARY CYST.

AN ACCOUNT OF A CASE WITH TONIC FITS RESEMBLING TETANY.

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A CHILD of 5 years of age was taken suddenly ill one morning with frontal headache and vomiting. For two days he vomited all food given to him. He seemed drowsy, but complained of no abdominal pain, and there was no diarrhœa. Physical examination revealed nothing. The child was given alkalis and glucose. There was no acetonuria. There was a low fever. On the third day two convulsions were observed by the parents. The child was described as "drawing himself up and then going stiff all over." During the third and fourth days the vomiting

continued whenever feeding by mouth was attempted, but not at other times. There was rapid wasting.

Physical Signs.—I examined the child on the fourth day of the illness. He lay on his side in an uneasy attitude. He had a hectic flush upon the cheeks. His eyes were sunken and his body wasted. Lethargy was marked, but he could be roused to obey simple directions, though he would not answer any questions. Nothing would persuade him to keep his eyes still for an instant, and ophthalmoscopic examination was thus impossible. There was fever of 100° F., but the pulse-rate was not raised throughout my visit. There was no sign of cranial nerve dysfunction, and no disease was found in the ear or throat. The tongue was thickly coated with a moist white fur. The muscles of the body generally were held a little stiffly; the neck resisted full flexion on the chest. Motor functions, as far as they could be tested, were found to be natural and equal on the two sides of the body. The reflexes were normal, with the exception that both knee-jerks were unduly brisk, considering the wasting of the muscles concerned. The left was exaggerated above the right. The plantar responses were flexor. No abnormality was found in the heart, lungs, or abdomen. The walls of the latter were "scaphoid" and resistant.

Course of Illness.—The patient was seen in the evening. A lumbar puncture was suggested, but this was not done, for the medical attendant found the boy very much improved on the following morning, the fifth day of the disease. Five days subsequently—on the ninth day—I was informed that the patient was sitting up and taking food well, and that he seemed nearly normal. Four days later I was again asked to see him. On the previous evening he had become unusually drowsy. Several indefinite fits had been noted by the parents, but none had occurred under medical observation. The doctor in charge had, however, found the child in an attitude characteristic of tetany, and this persisted until I made my second examination.

I found the patient lying limply on his back, unconscious. The head was not extended, but some rigidity was found on attempting movement. Both wrists were in rigid flexion; the hands were partly extended and the fingers strongly adducted, giving the hand the "obstetric" position. The feet were in the position of a performing toe-dancer, in rigid plantar-flexion. Rigidity of arms and legs was much less marked, but was obvious on attempting passive movements. The plantar reflex had now become extensor. No localising feature presented itself, but the father had noticed a squint lasting a short time and spasmodic movements of the left eyelid earlier in the day. The only other notable clinical feature was a continuous rolling nystagmus, without directional components, partaken of by both eyes. The temperature was 101° F. and the pulse-rate 100. The body was further wasted.

A differential diagnosis of tuberculous meningitis or deep-seated cerebral abscess was made, and a lumbar puncture agreed to. Immediately before this was undertaken three convulsions occurred, each lasting some 10 or 15 seconds. In each the trunk was slowly arched with the concavity backwards and to the right, the right leg stiffened into complete extensor rigidity, and simultaneously the left palpebral and facial muscles underwent rapid twitching contractions. Fluid withdrawn by lumbar puncture was clear and under considerable pressure. Analysis showed doubling (50 mg.) of the protein content. Five cells per c.mm. were seen—all mononuclear. The chlorides remained normal. The glucose was raised to 100 mg.

The patient died a few hours later.

Necropsy.—The ventricles of the brain were dilated to a moderate hydrocephalus. A cyst the size of a large grape lay on the under surface of the brain and filled the space behind the optic chiasma. It grew backwards and to the left, flattening the under surface of the mid-brain. The cyst was unilocular and when ruptured it left a smooth concave surface of brain tissue, uncovered apparently by membranes and flattened over an area of 1 in by 1 in. It appeared to grow either from the optic chiasma itself or from the pituitary body. The latter was harder than normal to the touch.

Microscopical examination was undertaken by Prof. G. Haswell Wilson, who gave the following report: "This is an epidermoid carcinoma of the type which might develop from the remains of the hypophyseal duct. It contains a number of cystic spaces, and in places the stroma contains islands of cartilage and spicules of bone. It is sometimes referred to as an "adamantinoma" of the pituitary. It appears to have destroyed the anterior part and to be invading the pars nervosa."

COMMENT.

The question of the differential diagnosis of the precise nature of the tumour is of interest. Its histology does not conform to that of the cysts of Rathke's cleft described by Worster-Drought, Carnegie Dickson, and Crowhurst Archer.[1] There is no ciliated epithelium and no cholesterol, nor is the cyst simple in type. The presence of cartilage and bone might suggest a teratoma. No highly organised tissues were present, however, and manifestations of metaplasia in adamantinoma have been recorded by Ewing.[2]

The entire destruction of the anterior portion of the pituitary body is of interest. In a child of 5 the manifestations of pituitary deficiency of a minor character are difficult to recognise. In the case of a cyst of Rathke's cleft, referred to above, however, reference is made to the child being backward in development before the age of 5. In a case of adamantinoma, recorded by Critchley and Ironside,[3] the child, at the age of 10, had the appearance of a delicate child of 6 or 7. One would expect a complete destruction of the anterior lobe of the pituitary body, such as is described in this case, to produce some signs of delay or alteration in fat metabolism and skeletal development. Doubt has been thrown upon the constant relationship of loss of the anterior lobe of the pituitary body and signs of infantilism. Difficulties arose in ascribing such divergent syndromes as that of Fröhlich and that of Lorain, to lesions of one and the same organ. Camus and Roussy [4] showed that symptoms of "dyspituitarism" could be produced by injury to the tuber cinereum, the pituitary body being left intact. On the other hand, Bellerby [5] quotes Paulesco,[6] Cushing,[7] Blair Bell,[8] and Smith [9] to the effect that removal of the anterior lobe produces a syndrome identical with that of dystrophia adiposo-genitalis, and that the disability can be removed in some cases by grafts of portions of the gland. Blair Bell states that clamping or separation of the infundibular stalk was found more effective than removal of the gland in causing the lesions in question.

Critchley and Ironside analysed six cases of adamantinoma. Of these, four had persistent headaches and vomiting bouts over a long period. Ophthalmic signs or symptoms occurred in the majority. One had bitemporal hemianopia; one diplopia and failing vision, with paracentral scotoma and swelling of one optic disc. One had blurred vision with bilateral papillœdema. One had mistiness of vision, and in one consecutive optic atrophy was found. These authors refer to no change in the blood or cerebro-spinal fluid. Worster-Drought, in his case of Rathke's cyst, found a blood-sugar of 0·086 per cent. with a raised sugar-tolerance curve. My case had a cerebro-spinal fluid sugar content of 0·1 per cent.—a slight but definite rise above normality. A striking feature of Critchley and Ironside's series was marked alopecia in two cases.

An interesting and unexplained feature in my case was the occurrence of tonic muscular contractions simulating tetany. There was no reason to suspect true tetany, but calcium chloride with a small dose of Collip's parathyroid extract (5 units) was given. No change in the carpo-pedal spasm or in the general spasticity occurred during the remaining few hours of the child's life. Critchley and Ironside record a comparable occurrence of rigidity in one of their series. It was in a woman of 24 years of age, in whom a decompression operation had been performed for the relief of symptoms. In this case attacks of head retraction occurred, and these were followed by "extension and rigidity of the limbs, flushed face, and immobility of the respiratory muscles." The attack lasted from 15 to 20 seconds. The authors regard the phenomenon as one of decerebrate rigidity. True decerebrate rigidity is produced experimentally by section of the motor tracts, below the level of the

red nucleus. The pyramidal and rubro-spinal tracts must be divided.

Cases of "tetany" occurring in cerebral tumours, cerebellar cysts, and syringomyelia are recorded.[10] Dr. James Collier allows me to mention an unpublished case of his at the National Hospital, Queen-square, in which fully developed tetany was associated with papillœdema and slight deafness. In this case a large eighth-nerve tumour was removed from the lateral recess, with resolution of the symptoms. Unilateral tetany has been recorded in syringobulbia,[11] and in cerebral hæmorrhage.[12] In both cases peripheral mechanical and electrical hyper-excitability were present. In Collier's case, as in mine, the diagnosis rests upon the clinical picture only, largely, that is to say, upon the posture. Collier has considered that some cases described as tonic basal epilepsy are in reality cases of tetany associated with a lesion of the central nervous system.[13] Whether electrical and mechanical hyper-excitability are to be regarded as essential features of tetany depends partly upon definitions and even more upon our further enlightenment as to its pathogeny. The method by which the pattern of tetany is imprinted is as yet obscure. But cases such as the one recorded serve as a reminder that the problem is a neurological as well as a biochemical one.

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CLINICAL AND LABORATORY NOTES

A GLYCOSURIC FAMILY WITHOUT HYPERGLYCÆMIA.

SO-CALLED RENAL DIABETES.

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THE MOTHER.

Mrs. E. B., an English woman, now aged 57 years, is known to have passed sugar in her urine (between 1 and 4 per cent.) for at least 44 years—without hyperglycæmia, polyuria, excessive thirst, or other distinguishing signs of diabetes mellitus. Owing to the absence of polyuria such cases cannot correctly be termed "diabetes," at least, not according to the original meaning of the term. They can hardly even be termed "renal," excepting in the sense that the glycosuria is due to a low renal "threshold" for sugar, which is a congenital-developmental condition, as the history of the present family (and some other families) shows. Probably glycosuria till now has never been known to have existed quite so long as 44 years, but the patient is every day breaking her own record, and, from the nature of the condition, as now admitted, it is clear that in others it may last for an equally long or longer time. There is no evidence that it has exercised any injurious influence on the general health of Mrs. E. B., or that per se it ever does so in similar cases.

I first saw Mrs. E. B., on June 18th, 1914, when she was 40 years old, on her admission to the German Hospital under my care suffering from acute polyneuritis of uncertain causation; all four limbs were affected, the upper ones much less severely than the lower ones. In the hospital the paralysis began rapidly to disappear and by July 17th she could walk about a little. By July 30th her tendon reflexes had all returned.[1] The substance excreted was ordinary glucose, but there was neither polyuria nor excessive thirst, and the blood-sugar was found to be only 0·083–0·094 per cent. No disease in the thoracic or abdominal viscera was discovered by ordinary examination and the blood-serum gave a negative Wassermann reaction.

[1] Weber, F. Parkes: Acute Polyneuritis in a patient with Chronic Diabetes Mellitus without Hyperglycæmia, St. Bartholomew's Hospital Reports, London, 1914, l., 163.

The most interesting point in the previous history of the patient was that in 1887, when about 13 years of age, she had been an in-patient at the Middlesex Hospital suffering from tonsillitis. From the medical registrar of that hospital I ascertained that according to the notes at that time (1887) she was passing 62 to 124 g. of glucose in 852 to 1705 c.cm. of urine daily, the specific gravity of the urine being about 1040.

In July, 1919, Mrs. E. B. saw Dr. W. Langdon Brown on account of headaches; he informed me that she still passed sugar in her urine and that her blood-sugar was within normal limits. When recently I saw her at the German Hospital on May 19th, 1931, her urine was of specific gravity 1036 and contained 3·5 per cent., sugar; it gave negative reactions for acetone and diacetic acid. The blood-sugar (fasting) was 0·096 per cent. There can therefore be scarcely a doubt that (as above stated) Mrs. E. B. has had continuous glycosuria since her urine was tested for the first time in 1887. She has lived a hard-working life and apart from fibrositic troubles and occasional headaches (possibly of the nature of migraine and sometimes accompanied by retching and, if she takes any food, by vomiting), her general health has been good.

In regard to Mrs. E. B.'s parents they are said to have been first cousins and to have died of pulmonary tuberculosis, aged 37 and 58 years respectively. I do not know whether either of them or both of them had glycosuria, but Mrs. E. B.'s two sisters and one brother have not glycosuria. However, Mrs. E. B.'s glycosuria ("renal diabetes") has been inherited by some of her children. She has had five children, all of whom are still living, and one miscarriage, in the following order.

THE FIVE CHILDREN.

1. A daughter, Mrs. P., aged 26 years, who is married and has one child, a boy aged 4 years. Specimens of urine from both of them, examined in May, 1931, have been found free from sugar. They have, therefore, probably escaped the familial glycosuria. It should be noted that this Mrs. P., the eldest child of Mrs. E. B., had a different father than Mrs. E. B.'s subsequent children have had, all of whom now have glycosuria without hyperglycæmia.

2. J. W. B., Mrs. E. B.'s eldest son, aged 21 years, a well-developed young man, when in New Zealand

during November, 1930, complained of headache accompanied by a little vomiting, somewhat similar to his mother's attacks. His urine was examined and found to contain sugar. He was put on an anti-diabetic diet and treated with insulin till his return to England in May, 1931; in fact, he received insulin injections even during the voyage home. When I saw him on May 19th, soon after his return, he looked strong and sunburnt; his urine contained 4·8 per cent. sugar and was free from acetone and diacetic acid. His blood-sugar (fasting) was 0·091 per cent. On May 22nd a blood-sugar curve was taken and found normal, the fasting blood-sugar on that occasion being 0·073 per cent.

3. A daughter, A. E. B., aged 20 years, whose urine, when tested recently, contained 4·3 per cent. sugar. Her blood-sugar curve (June 5th, 1931) was found to be normal, the fasting blood-sugar on that occasion being 0·089 per cent. She is well grown and the only obvious abnormality about her excepting the glycosuria is that she has a typical "nævus anæmicus" on her right hand, which I demonstrated on June 18th at the Dermatological Section of the Royal Society of Medicine. She sometimes has headaches similar to those of her mother.

4. A son, H. J. B., aged 18 years, had 0·3 per cent. sugar in his urine when it was tested recently. His blood-sugar curve on May 29th, 1931, was normal, but on that occasion his urine was free from sugar. It seems that he only occasionally has glycosuria. Dr. George Graham has referred to individuals with true "renal glycosuria," who pass sugar only after a meal. (A miscarriage at the fourth month came (in 1915) between this child and the youngest one.)

5. The youngest child, a boy, A. G. V. B., aged 15 years, was recently found to be passing urine containing 2·5 per cent. sugar. His blood-sugar curve, taken on June 5th, 1931, was normal, the fasting blood-sugar on that occasion being 0·084 per cent.

REMARKS.

This family group, though consisting of only two generations, is interesting, because it shows how in cases of the kind the glycosuria may increase the difficulties of diagnosis, when any infection or temporary illness occurs. Thus, in the mother, Mrs. E. B., in 1914, the unimportance of the glycosuria was not at first recognised when she was attacked by the alarming acute polyneuritis and was almost completely paralysed.

When her son (J. W. B.) had an attack of headache with slight vomiting, as his mother sometimes has, the discovery of sugar in his urine led (in a New Zealand hospital) to the diagnosis of grave diabetes mellitus; he was apparently given to understand that he would fall a victim to diabetic coma if he did not keep to the special diet and continue the insulin injections. When I heard of his supposed dangerous illness, I naturally suspected that his glycosuria would turn out to be of the same nature as his mother's.

The case of the mother (Mrs. E. B.) is by itself of great interest, since it is clear that she must have been passing sugar in her urine for 44 years without being any the worse for it. Nevertheless, from the elaborate "Study of Orthoglycæmic Glycosuria with Particular Reference to its Hereditability," by Dr. Urban Hjärne (translated by Carl Westman, and published in Stockholm in 1927), a copy of which has been lent me by Dr. Graham, it appears that true diabetes mellitus may occur in "renal glycosuria" families. In the present family the fact that the parents of Mrs. E. B., were first cousins should be noted, though it is not known whether either of them had glycosuria.

I am indebted to the assistance of my house physician, Dr. M. Scholtz, and without the help of Dr. George Graham, I should not have been able to settle the nature of the glycosuria in Mrs. E. B. in 1914.

This account may prove of interest in regard to similar small family groups that are certain to turn up from time to time in England and abroad. Personally it may save me much trouble, as my printed accounts of rare or doubtful cases have sometimes done, by way of replying to doctors under whose observation the individuals themselves or members of their families subsequently fall.

RECOVERY FROM STREPTOCOCCAL SEPTICÆMIA

COMPLICATED BY BRONCHO-PNEUMONIA AND PERICARDITIS.

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THE high fatality-rate of streptococcal septicæmia is illustrated in the recent issue of *Guy's Hospital Reports*,[1] where, out of 21 cases recorded only six recovered. The treatment of the condition with serum appeared in this series of cases to be unsatisfactory, since out of eight cases which were treated with various brands of serum, seven ended fatally.

The authors of this section of the report state that there seems to be very little evidence in favour of the efficacy of serum therapy and emphasise the disadvantage of subsequent serum sickness. The occurrence, however, of serum sickness in patients treated with concentrated serum is of so little importance as to be negligible. We are inclined to think that the whole value of the treatment with serum depends on the specificity of the serum to the infecting organism. F. Griffith has described four types of scarlatinal hæmolytic streptococci, but as we have shown elsewhere [2] even in cases of scarlet fever over 53 per cent. of the types of hæmolytic streptococci found did not agglutinate with the four type sera. If, then, the serum with which the patient is treated is not specific for the infecting organism, no dramatic results can be anticipated, and if we are to regard the hæmolytic streptococci as in any way analogous to the pneumococcal and meningococcal types of organisms, the specificity of the serum administered is of the first importance. Good results have been obtained by the use of antiscarlatinal serum in the treatment of streptococcal septicæmia by Sanderson et al,[3] Burt-White,[4] Lord and Holmes,[5] Rosher,[6] and more recently by Comber.[7]

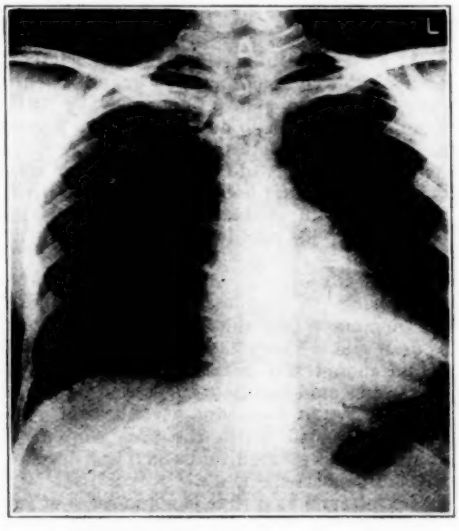
Cadham [8] claims remarkable success in the treatment of septicæmia; out of 56 cases, of whom 38 showed a hæmolytic streptococcus in the blood, 45 recovered. He acknowledges the importance of specificity of the therapeutic serum and endeavours to obtain this by the use of multiplicity of strains of streptococci in the preparation of his immune sera. But he believes that, in addition to the use of specific sera, it is necessary to augment this treatment by the

repeated transfusion of normal human serum in order to activate complement.

REPORT OF THE CASE.

The following case is of some interest because it shows that some sera will not benefit a case of septicæmia (although they are potent for certain strains of hæmolytic streptococci), while other sera will produce a dramatic cure. It is suggestive at least that the belief of Allison and Gunn [9] in the necessity of highly specific antistreptococcal sera for the treatment of streptococcal infections is well founded.

A probationer nurse at the Ilford Isolation Hospital, aged 23, was taken ill on Feb. 24th, 1930, with vague pains and pyrexia. She was at first thought to be suffering from influenza. She had a small subcutaneous abscess on the left thumb which was opened and yielded a growth of



Radiogram showing pericardial adhesion.

Staphylococcus albus and *Streptococcus viridans*. Although there was no evidence of hæmolytic streptococci in the pus, we think it was possible that the site of the abscess was the means of entrance of the organism. She, however, showed no signs of cellulitis, lymphangitis, or adenitis. The temperature was 103° F., but she showed no signs of being seriously ill. During the next day or two the pains of which she was complaining appeared to be more localised in the joints and the possibility of rheumatic fever was considered. On Feb. 29th, however, all her pain disappeared with the exception of that in her right knee which showed definite evidence of effusion into the joint. At the same time she developed pleurisy at the left base. A blood culture was taken and hæmolytic streptococci which were inagglutinable to Griffith's type sera were found.

Her temperature which had been ranging from 103° to 101° came down to normal, but again rose on the sixth day of the disease. She was given 25 c.cm. of antipneumococcal serum and 70 c.cm. of antiscarlatinal serum (of a brand which we usually employ in our scarlet fever wards and which has given excellent results) during the next five days. Her condition gave rise to considerable anxiety; she was desperately ill with extreme cyanosis and marked dyspnœa. Oxygen was freely administered with Haldane's apparatus. The serum which had been administered had not the slightest effect upon her condition.

It should also be stated that the patient was treated from the beginning of the illness with vitamin A in the form of radiostoleum, but it had not the slightest effect on her condition. This confirms our previous views on this mode of treatment.[10]

In view of the fact that the hæmolytic streptococci which were found were inagglutinable we considered it possible that the serum which we had used was not specific for the toxin of the infecting organism, and on March 7th other intensive serum treatment was commenced. A total of 120 c.cm. of concentrated antipuerperal serum and 120 c.cm. of concentrated antiscarlatinal serum (of another brand than that administered in the first instance) were given from the 7th to the 10th. She developed well-marked pericardial friction at the base of the heart. The temperature came down to normal by lysis on March 12th and remained normal with the exception of two slight rises to 99° on March 24th and 27th.

The patient, however, showed signs of pneumonic consolidation of the lower half of the left lower lobe and also in the region of the right interlobar fissure behind, and this condition of the lungs remained stationary for a fortnight, in spite of the fact that the temperature remained normal except as stated above. This caused us to ask Dr. W. L. Yell, the Ilford tuberculosis officer, to see the case, since the possibility of pulmonary tuberculosis supervening seemed to be indicated. He, however, agreed with us that the condition was not tuberculous, and the sputum did not show the presence of tubercle bacilli. We therefore decided to desensitise the patient (this was done on March 29th) and to administer further doses of antitoxic serum. A further 68 c.cm. of antipuerperal serum and 70 c.cm. of antiscarlatinal serum were given. The general and local conditions now improved with remarkable rapidity, and signs in the chest of pneumonia and pericarditis gradually disappeared. By the 56th day the respiration-rate was normal and by the 65th day the pulse-rate had dropped to under 100. The patient made an uninterrupted recovery and was discharged on the 116th day of the disease. Three months later she returned to duty. She was then examined by ourselves and Dr. Yell who could find no signs of any lung disease with the exception of some restriction of movement at the left base. A radiogram showed that she has some adherence of the pericardium (see Figure). She has remained on duty at the hospital since and has done her work without any difficulty.

On return to duty the patient was Dick tested and found to be Dick positive. It is also of interest to note that she was Dick positive on her entrance to the hospital and had been immunised.

COMMENT.

We think the following points are of interest in the case:—

(1) Difficulty of diagnosis: Ryle and Smith [1] have stated that there are four manifestations which may be regarded as diagnostic of streptococcal infection with a hæmolytic strain—namely, diarrhœa, albuminuria with red cells, rapidly progressing anæmia, and smooth red desquamating sore tongue. None of these was present in this case. The repeated rigors which are also considered of diagnostic importance and the enlargement of the spleen were also conspicuous by their absence.

(2) The importance of an early blood culture in cases of pyrexia of doubtful origin.

(3) The value of the treatment of streptococcal septicæmia with sufficient doses of concentrated antitoxic sera and the importance if one brand of antistreptococcal serum fails, of the recourse to another, our supposition being, as stated, that all antistreptococcal sera are not antitoxic to all types of hæmolytic streptococci.

(4) The ease with which such serum can be administered (in our case it was administered intramuscularly) and with which, in the event of complications developing, the patient can be desensitised and serum treatment again instituted with satisfactory results.

(5) With ordinary precautions the fear of serum sickness emphasised by Ryle and Smith is of no importance. This is the experience of observers who have been engaged in the treatment of scarlet fever with concentrated antiscarlatinal serum administered

intramuscularly. In our own case, the only ill-effect of the serum was a slight serum rash which did not inconvenience the patient.

Some observers attribute the beneficial effects of the treatment of certain cases of septicæmia with serum to protein shock but this was certainly not a factor in our case. The opinion of D. and R. Thomson,[11] based on the recorded literature, is that while favourable results with the various antisera may be expected—owing to the occurrence of a certain amount of cross-neutralisation amongst hæmolytic streptococci, so closely related—it is quite obvious that the specific antisera must give the best therapeutic results.

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MEDICAL SOCIETIES

ASSOCIATION OF CLINICAL PATHOLOGISTS.

THE fifth summer meeting was held in the pathological department of the General Infirmary, Southport, on June 20th, Dr. E. CRONIN LOWE presiding.

Dr. J. G. GREENFIELD read a paper on the

Clinical Pathology of the Cerebro-spinal Fluid.

He drew attention to the value of the Queckenstedt phenomenon in the diagnosis of sinus thrombosis; a fall of pressure, with absent or only slow return of the fluid to a higher level on pressure upon one jugular vein was a strong indication of thrombosis upon that side; he emphasised also the importance of flakes of preformed fibrin in the fluid upon withdrawal as an indication of subdural hæmatoma. In cases of *chronic disease* Dr. Greenfield held that a routine examination demanded a total and differential cell count, tests for the presence of globulin by the Pandy and Nonne-Apelt reactions, estimation of the total protein, and the performance of one of the colloidal reactions, preferably the bi-coloured guaiac reaction, and the Wassermann reaction. In regard to the latter, Dr. Greenfield pointed out that a Wassermann reaction stronger in the cerebro-spinal fluid than in the blood, or a positive Wassermann reaction in both fluid and blood disappearing on treatment more rapidly from blood than from the spinal fluid, both indicated a syphilitic infection of the parenchymatous rather than the meningeal type. In the investigation of *acute cases* it was important to remember that the cerebro-spinal fluid is a good culture medium and that in meningococcal meningitis incubation of the fluid overnight would often give a profuse growth of the organism before it had appeared upon artificial culture media. The chloride percentage in the spinal fluid he regarded as dependent upon its level in the blood; determination of chloride percentage was of the utmost value in the diagnosis of tuberculous meningitis. The sugar percentage was low in all acute infections; acetone was present in many cases of hyperemesis and cyclical vomiting; the urea level was greatly raised in uræmia.

Dr. S. C. DYKE stated his view that although it was satisfactory to find the bacillus in tuberculous meningitis, it was quite possible to establish a firm diagnosis without demonstrating the bacillus and that too much time should not be spent in searching for it. In the presence or absence of a fine clot, and with knowledge of the total and differential cell count, the chloride, sugar, and protein percentages, and the presence or absence of excess of globulin, it was possible to say that a cerebro-spinal fluid was or was not from a case of tuberculous meningitis. Dr. Dyke drew attention to the fact that the chloride level of the spinal fluid was lowered not only in pulmonary but also in peritoneal pneumococcal infection.

Dr. A. F. S. SLADDEN emphasised the importance of performing a complete routine examination on all specimens of cerebro-spinal fluid, and the futility of confining investigation to only one or two procedures.

Dr. HUGH SMITH stated that if a few threads of cotton wool were added to fluid from cases of tuberculous meningitis and the fluid was centrifuged, the tubercle bacilli tended to adhere to the threads and could then be readily demonstrated in a slide preparation by staining.

Dr. G. W. GOODHART, while ready to believe that it was possible to diagnosis tuberculous meningitis without demonstrating the bacillus, pointed out that it was desirable in every case to do so; were this not done, and should the patient subsequently recover, the diagnosis would inevitably be called into question.

Dr. F. B. SMITH said that he had seen a case of pituitary tumour in which the urea content of the spinal fluid had been high, and asked if other members had had any such experience.

Dr. GREENFIELD said that in some cases of cerebral disease, notably in post-vaccinal encephalitis, he had found a high urea content.

Dr. H. SMITH briefly recorded a case of aseptic meningitis after spinal novocain anæsthesia with recovery.

Dr. GOODHART recorded five cases of

Megaloblastic Anæmia not of the Pernicious Type.

All these cases showed a progressive anæmia with high mean diameter of the red cells; in every case, however, it was possible to demonstrate that they were not of pernicious type by plotting the Price-Jones curve. In all cases this curve, although shifted to the right of normal, was symmetrical, the cells showing an even deviation about the mean. The first case at autopsy showed numerous polypoid masses in the small intestine; the second resembled pernicious anæmia in every way except in the symmetrical nature of the Price-Jones curve and the fact that the bone-marrow at post mortem was found not to be hyperplastic; the third case showed ascites and jaundice; in the fourth the condition had followed upon generalised glandular enlargement vigorously treated by deep X ray therapy. This patient responded to iron. None of these patients gave any response to liver or to desiccated stomach. The fifth case was one of sprue and the patient responded to liver treatment.

Dr. SLADDEN drew attention to the Arneth count in the diagnosis of pernicious anæmia. He said that in all typical cases there was a shift to the right.

Dr. F. B. SMITH referred to a case of anæmia in a child of 15 months showing megalocytosis, which responded to liver. He asked whether other members had experience of anæmia of pernicious type at this age.

Blood Transfusion.

Dr. S. MILLER demonstrated apparatus for the performance of blood transfusion. He drew attention to the confusion caused by the coexistence of the Moss and Janssky classifications of the blood groups, and asked the opinion of the meeting as to the best form of classification; he commented on the value of autotransfusion in cases of ruptured ectopic pregnancy, and asked whether members advised transfusion in cases of bleeding from duodenal ulcer.

The SECRETARY (Dr. Dyke) pointed out that the Association had already adopted the International classification of the blood groups on the basis of the A and B agglutinogen content of the red cells; this he considered to be the only way of escape from the existing confusion in nomenclature; he stated that in his experience transfusion in gastric bleeding entailed no risk of restarting the hæmorrhage and that citrated blood appeared to be actually hæmostatic.

Dr. Dyke reported two cases of transfusion in universal agglutinators. The serum from both these patients agglutinated the cells of all prospective donors, irrespective of group, and even their own red cells; this agglutination took place only in the cold and was reversed at incubator temperature. In both cases the transfusion had been followed by a severe reaction which, however, had readily responded to adrenalin and morphia. The speaker drew attention to the fact that "auto" or "cold" agglutination afforded no contra-indication to transfusion.

Demonstrations.

In the course of the afternoon demonstrations were given by Dr. E. Cronin Lowe: Short Note on Agranulocytosis; Biliary Obstruction in a Child; Fibro-endothelioma of the Optic Nerve; Sarcoma of the Heart. Dr. W. Rolland: Some Pathological Conditions of the Uterus. Dr. Hugh Smith: Note on *B. abortus* Infection; Certain Eye Specimens; Tumour of Knee (for Diagnosis); A Note upon Standardisation by Barium Sulphate Suspensions. Dr. F. B. Smith: Ischæmic Tumour of the Sartorius Muscle; A Very Early Ectopic Pregnancy; An Unusual Granuloma. Dr. W. Howel Evans: Sections of New Growth of Lung from Specimens Coughed up in the Sputum.

PATHOLOGICAL SOCIETY
OF GREAT BRITAIN AND IRELAND.

A MEETING of this society was held at the University of Glasgow on July 3rd and 4th, with Prof. R. MUIR and Prof. C. H. BROWNING in the chair.—G. H. EAGLES (London) described the difficulties and uncertainties of obtaining multiplication of vaccinia virus in cell-free media; in kidney extracts positive results are frequently got, in broth only once.—J. A. BRAXTON-HICKS and F. D. M. HOCKING (London), after a critical inquiry into Chevassut's spherule, concluded that it had nothing to do with disseminated sclerosis and was a flocculation product of mixing cerebro-spinal fluid with serum-broth.—J. W. S. BLACKLOCK (Glasgow) had investigated the types of tubercle bacilli responsible for lesions in children under 12 in Glasgow; 3 per cent. of the thoracic, 80 per cent. of the abdominal, and 27 per cent. of all cases were found to be bovine—a considerably higher proportion than is found in England.

J. S. ANDERSON, F. C. HAPPOLD, J. W. MCLEOD, G. R. ROSS, A. L. TAYLOR, and J. G. THOMSON (Leeds) showed that diphtheria bacilli could be divided into two main groups: (1) growing in broth with a pellicle and granular deposit, fermenting starch and glycogen and causing the more severe cases of human disease; (2) growing in broth with a uniform turbidity, not fermenting starch or glycogen, and causing a mild disease. They also described a blood-agar tellurite medium made with unheated broth on which the diphtheria bacillus could usually be distinguished at sight.

ISOBEL J. F. BLAKE (Edinburgh) had investigated the infection of trout with *Bacillus salmonicida*, which causes an essential septicæmia, the furuncular skin lesions being secondary. The fry are more resistant to infection, which is favoured by warm water. Carriers are common and initiate outbreaks.—J. CRUICKSHANK (Aberdeen) described a curious coccus (apparently a common saprophyte), which completely prevented the growth of other bacteria in its neighbourhood, producing hydrogen peroxide.—R. CRUICKSHANK, F. FLEMING, and J. MONTGOMERY (Glasgow), after studying 500 cases of lobar pneumonia, found that infections with Type II. pneumococci are more fatal than with Type I., which occurs especially in the young. Fever is generally lower with Type II., crisis less frequent, and leucocytosis less; empyema is more frequent with Type I.; positive blood cultures are equally common with both.—J. GORDON (Leeds) showed that streptococcal and *welchii* hæmolysins were neutralised by Congo red and that the combination could be undone by absorbing the Congo red with artificial silk.

C. H. BROWNING, J. B. COHEN, S. ELLINGWORTH, and R. GULBRAUSEN (Glasgow and Leeds) described some anil compounds which could prevent and cure experimental streptococcal infections produced in mice.—H. J. PARISH and W. CLARK (London) discussed the production of a serum which would neutralise staphylococcal toxin and which had given promising results.—G. L. TAYLOR, G. S. ADAIR, and MURIEL ROBINSON (Cambridge) showed that antigenic proteids could be estimated with a considerable degree of accuracy by an antiserum and Dean's optimal proportion method.—H. R. DEAN, R. WILLIAMSON, and G. L. TAYLOR (Cambridge), using horse serum, anti-horse serum, rabbit serum, and guinea-pigs, had found that a certain number of deaths from acute passive anaphylaxis followed the injection of the antigen immediately after the antibody. Some animals died after receiving antiserum alone.

E. ff. CREED (London) described the conditions under which β radiation destroyed agglutinins.—R. D. MACKENZIE and R. S. MARSHALL (Edinburgh) detailed a number of instances in which they had met with anticomplementary serum in Africa, particularly was this seen in cases of sleeping sickness.—LOUISE PEARSE (New York) gave an account of rabbit syphilis, which usually becomes generalised though the lesions may need carefully looking for; the spirochæte lives on indefinitely. In the blood there is a monocyte leucocytosis and an excess of histiocytes in the local lesions.—JOAN M. ROSS (London) described a strange case of enlarged spleen which ultimately died of a severe anæmia.—LUCY WILLS (India) had found that bartonella anæmia in rats could be produced by a diet deficient in vitamins A and C.

A. E. BOYCOTT and C. L. OAKLEY (London) described the intimate relationship between the concentration of

hæmoglobin in the blood and the activity of the marrow as judged by the number of reticulocytes.—C. PRICE-JONES (London) found the normal average hæmoglobin of healthy young males in London to be 105 per cent. on the Haldane scale (with a range from 96–116), in Boston 112 per cent.; he suggested that the relative polycythæmia was due to mild chronic CO poisoning from motor engines. Women in London gave a mean of 98 with a range from 90 to 110.—R. MUIR (Glasgow) gave the result of his further investigation of Paget's disease of the nipple, which is undoubtedly due to the invasion of the epidermis about the nipple by malignant cells from a carcinoma arising in the ducts or acini.

I. BERENBLUM (Leeds) dealt in further detail with his discovery that mustard gas prevents the carcinogenic effect of tar; the influence is local and immediate, and not due to any effect of the gas on the tar.—D. F. CAPPELL (Dundee) described two unusual cases of what appeared to be adamantinoma of jaw, one of them with many foamy cells without lipoid.

L. R. W. PRICE (Glasgow) showed a rapidly growing carcinoma of the neck, believed to have arisen in a parathyroid rest or in the carotid body.—J. B. DUGUID (Cardiff) had a case of localised kidney atrophy due to tubular necrosis in a child of 4½ years.—W. A. ALEXANDER (Edinburgh) described the hæmorrhages into the rectus abdominis occurring in influenza. They occur always in the lower half of the muscle and are immediately due to violent coughing, though they are probably preceded by a change in the muscle analogous to Zenker's degeneration.—W. A. MACKEY (Edinburgh) found that in acute cholecystitis remnants of epithelium persist, from which a normal mucosa is regenerated.

DEMONSTRATIONS.

The following were also shown among the exhibits:—D. F. CAPPELL: three cases of primary carcinoma of jejunum, endosteal fibroma of fibula, leiomyosarcoma of skin. MAY H. CHRISTISON: colony variants of acid-fast and diphtheroid bacilli. S. MCDONALD and R. J. WILLAN: tumours of testis. E. M. DUNLOP and H. E. MAITLAND: pleomorphic *Bacillus proteus*. J. KIRKPATRICK: methods of staining flagella. D. B. COLQUHOUN and J. KIRKPATRICK: motile typhoid glanders and plague bacilli isolated from apparently non-motile cultures. W. L. FORSYTH: *Bacterium dispar* of Andrewes. K. J. GUTHRIE: bacteriophage from sewage. J. W. S. BLACKLOCK: neuroblastoma; three tibias from the same child who twice regenerated a bone after osteomyelitis. T. RETTIE: a fresh method of staining fat with Nile blue. R. CRUICKSHANK: Zondek-Aschheim and Friedmann tests for the diagnosis of early and pathological pregnancy. G. L. MONTGOMERY: hypertrophic biliary cirrhosis. R. D. PASSEY: three spontaneous tumours in Plymouth Rocks. JANET S. F. NIVEN and R. ROBISON: calcification in vitro of embryonic rabbit bone. A. L. TAYLOR: malignant adrenal tumours; acromegaly; focal lesions in generalised vaccinia (post-vaccination death).

REVIEWS AND NOTICES OF BOOKS

Chronic Arthritis and Rheumatoid Affections.

With Recovery Record. By BERNARD LANGDON WYATT, M.D., F.A.C.P., Director, The Wyatt Clinic; Member Editorial Staff of "Acta Rheumatologica" of the International League against Rheumatism. Edinburgh: E. and S. Livingstone. 1931. Pp. 166.

So much has been published recently on the subject of arthritis and rheumatoid conditions that it is impossible for any book to contain entirely new material. But the reader interested in this disease will find Dr. Wyatt's book worthy of attention, since fresh aspects of chronic arthritis are discussed. An especially useful chapter is that devoted to joint exercises. The author gives his own methods and quotes at length from other authorities; he supplies adequate tables and offers some explanation of the value of the various movements. Another interesting section is that on climate and sunbaths. In the dry hot atmosphere of Arizona, where Dr. Wyatt is director of a sanatorium for rheumatic patients, chronic arthritis is practically non-existent amongst the residents. While sunbaths may be of great value in the treatment of chronic arthritis and fibrositis, the author condemns the indiscriminate use of solar therapy, which, in his experience, may be dangerous in certain cases. The arrangement of the material in the book is, we feel, not very well balanced. For example much space is allotted to the question of diet, which Dr. Wyatt acknowledges to be of minor importance, whereas such a fundamental section as physiotherapy is dealt with only in broad outline. The author considers his book suitable literature both for physician and patient. It is true that this is a disease where close coöperation between patient and physician is essential, but the wisdom of encouraging a patient to study a text-book on his own disease, especially when it is an intractable one, is open to question.

The book is easy to read and will provide useful information to doctors which they can pass on at their discretion. Those who find pleasure in apt sayings and quotations will reap here a rich harvest.

Treatment of Epilepsy.

By FRITZ B. TALBOT, M.D., Clinical Professor of Pediatrics, Harvard University Medical School; Chief of Children's Medical Department, Massachusetts General Hospital. London: Cassell and Company, Ltd. 1931. Pp. 308. 18*s*.

THE title of this book is misleading. It really consists of a brief account of epilepsy, and a full account of its treatment by the ketogenic diet. The author has divided the book into two separate sections, of which the second supplying valuable details of this particular treatment is discussed on p. 82 of this issue. In the first section an attempt is made to give some account of the history, incidence, ætiology, symptoms, pathology, diagnosis, prognosis, and treatment of epilepsy in 119 rather small pages. Reference is made to much of the recent work on epilepsy, and modern views on its ætiology are outlined and very briefly discussed, mostly on non-committal lines. Fortunately, this brevity is partly compensated for by an ample and admirable bibliography. But this section of the book is not nearly full enough for inclusion in a standard text-book of the disease; nor can it be placed beside other comprehensive résumés of modern work and views on epilepsy which have been produced in recent years. Nor is there much that is new in these 119 pages. Two points deserve attention here. First, the value of regular physical exercises, especially those designed to combat postural defects, is rightly stressed. Secondly, the author has travelled a long distance from the orthodox view of prohibiting marriage among epileptics. He holds that if the disease is individual rather than hereditary and the patient is able to contribute generously to the welfare of the community, there can be little objection to marriage with a healthy mate.

Even when the disease is hereditary the marriage would, in his view, be racially valuable rather than harmful if the other conditions were fulfilled, since not all the children would carry the epileptic taint, and the few abnormal offspring would not be a social burden. We cannot believe that many with an intimate acquaintance of the mental, physical, and social handicaps of epileptics would subscribe to these views.

Food Poisoning and Food-borne Infection.

By E. O. JORDAN, Chairman of the Department of Hygiene and Bacteriology, University of Chicago. Chicago: University of Chicago Press. Pp. 286. 11*s*. 6*d*.

PUBLISHED as one of the University of Chicago Science Series, this book succeeds in its aim of being accurate and scientific but not too technical. The title is used in a very wide sense, and covers subjects such as infectious disease spread by food and animal parasites, poisonous plants and animals, food allergy, metallic poisons in food, preservatives and colouring matters, milk sickness, ergotism, and lathyrism. The term "ptomaine poisoning," still frequently used, is condemned as inaccurate and unscientific. Interesting information is given on poisonous plants, some of which, such as rhubarb, are not commonly regarded as poisonous. A good account is given of mushroom poisoning. The subject of preservatives in food is discussed with common sense, and benzoic acid and the benzoates are regarded as preservatives for which a favourable case can be made out. In the United States their presence and amount must be plainly stated on the label. The author concludes: "We do not at present know what effect is produced in human beings of different ages and varying degrees of strength by the *long-continued* consumption of food preserved with particular chemicals." Excellent but comparatively short accounts are given of food poisoning from the Salmonella group and of botulism, the latter account being the more complete, no doubt in accordance with its particular importance in America. Between 1899 and 1927, according to Dr. Jordan, about 550 authentic cases of botulism in the United States were traced, and probably a considerable number were overlooked. In 1926 and 1927 there were only 6 and 11 cases respectively. An interesting account is included of toxic substances produced by certain staphylococci and streptococci which have been found associated with some outbreaks of food poisoning, much of the work having been done by Prof. Jordan or in association with him.

The volume may be recommended as a clear, accurate, and interesting volume on an important subject.

Die Primäre Verrücktheit.

Sammlung Psychiatrischer und Neurologischer Einzeldarstellungen. Vol. I. By KURT KOLLE. Leipzig: Georg Thieme. 1931. Pp. 268. M.25.

THE editors of the "Fortschritte der Neurologie Psychiatrie und ihrer grenzgebiete" could not have chosen a better work than this with which to start series of monographs. Paranoia is still one of the their most obscure subjects in psychiatry, and Dr. Kolle's painstaking investigation should do much to clear up some of the problems of this rare but important disorder. In pursuance of the modest aims stated in his preface, he has made a careful clinical, psychopathological, and genetic study of the Munich cases upon which Kraepelin based his conception of paranoia, and of others collected in the psychiatric clinic at Kiel. The work has occupied him almost exclusively since 1926, and its results are here set forth in detail so that the reader has available all the material for forming an independent judgment. Dr. Kolle's general conclusion is that these cases, judged by psychopathological and genetic criteria, represent a particular form of schizophrenia, to which he would apply Kraepelin's word "paraphrenia." His examination of the delusions, according to the method of the Heidelberg school, and his inquiry into family morbidity are well worth study by psychiatrists, as are also the admirable case-reports which comprise the second half of the work.

Vaccination préventive et curative du cobaye et du lapin contre la tuberculose humaine.

Ses indications et ses effets chez l'homme. By JULES AUCLAIR, Médecin de l'Hôpital temporaire du Bastion 29. Paris: Masson et Cie. Pp. 186. Fr.25.

La vaccination contre la tuberculose par le B C G.

By Dr. ROLAND CHAUSSINAND. Paris: G. Doin et Cie. 1931. Pp. 196. Fr.38.

THE basis of Dr. Jules Auclair's book is to be found in the employment of a special tubercle vaccine devised and prepared by himself. It consists of tubercle bacilli, either virulent or killed by heat, treated for several days with extract of the pancreas of the fowl at a low temperature. The details of the preparation of this vaccine as given here are extremely scanty; a little more information about it will be found in an article written by Dr. Auclair four years ago.[1] Several series of experiments with both types of vaccine in guinea-pigs and rabbits are described and the preventive and curative vaccination of these animals against *B. tuberculosis*, together with the use of tubercle vaccine in man, is discussed at some length. As a result of his experiments, Dr. Auclair concludes that guinea-pigs can be completely healed of tuberculosis by his vaccine, but if a weak dose of vaccine is used healing will take place only if the disease is but slightly advanced at the time of inoculation. Among rabbits the process of healing is said to take place more readily, and even in advanced cases. With regard to vaccination of man the author is cautious, stating that more prolonged clinical studies must be made before he can come to any definite conclusion; but he states that healing does take place in cases with external tuberculous lesions such as lupus and cutaneous tuberculosis. In other cases, if vaccination takes place at the time of infection or soon after, Dr. Auclair believes that even if it does not always heal the lesions, at any rate it confers some degree of resistance and immunity for a long time. The book concludes with a very short bibliography.

Since Calmette first introduced his now well-known B C G vaccine there must have been little short of a thousand papers published of one kind and another dealing with the subject. Several collective reviews have been made in various journals, and now Dr. Chaussinand, evidently a disciple, epitomises practically all of the earlier work and many of the more recent papers. There is nothing new in the monograph. The conclusions reached by Calmette are clearly set out and a really excellent bibliography, probably the fullest that has yet been issued, is

[1] Presse Médicale, 1927, i., 353.

appended. We can recommend the book as a clear presentation of the claims of the Calmette vaccine, and the reader who makes use of it will be saved a vast deal of trouble in hunting up references to an enormous literature which has accumulated since Calmette's original paper was published in the Annales de l'Institut Pasteur in 1926. The reader who studies the book alongside the account given by Calmette himself in "L'infection bacillaire et la tuberculose," of which the third edition appeared in 1928 (Paris, Masson et Cie) will find himself possessed of practically all the information on the subject up to the beginning of 1930. The book contains a preface by Prof. Calmette.

Diagnosis and Treatment of Venereal Diseases.

Second edition. By DAVID LEES, F.R.C.S., M.R.C.P. Ed., Surgeon in Charge of Venereal Diseases, Edinburgh Royal Infirmary. Edinburgh: E. and S. Livingstone. 1931. Pp. 634. 15*s*.

THE second edition of Mr. Lees's book for students and practitioners is sure of a welcome, for it is not merely a text-book, but rather an exposition of the methods used in hospital practice and teaching by a practical man who is also an enthusiast about his subject. Modern methods of diagnosis and treatment of venereal diseases are clearly explained and where possible tabulated, so that the amount of treatment required for patients at any stage of syphilis can easily be grasped. A new chapter is supplied on cardio-vascular syphilis, and the section on syphilis of the nervous system has been revised and supplemented.

The diagnosis and treatment of gonorrhœa are well described. It is of interest to note that Mr. Lees, in common with a good number of workers in venereal diseases, has been unable to obtain by local diathermy, either in males or in females, such good results as did Cumberbatch and Robinson, who strongly advocated this method.

A misprint or an omission in the first lines on p. 80 mars the otherwise admirable section on differential diagnosis of syphilis. The book contains 87 illustrations, over 70 of them being photographs of actual lesions. The colour photographs are particularly vivid.

This volume is a reliable and important addition to the bibliography of venereal disease.

A Text-book of Histology.

By ALEXANDER A. MAXIMOW, Late Professor of Anatomy, University of Chicago. Completed and edited by WILLIAM BLOOM, Assistant Professor of Anatomy at the University. London: W. B. Saunders Co., Ltd. 1930. Pp. 833. 40*s*.

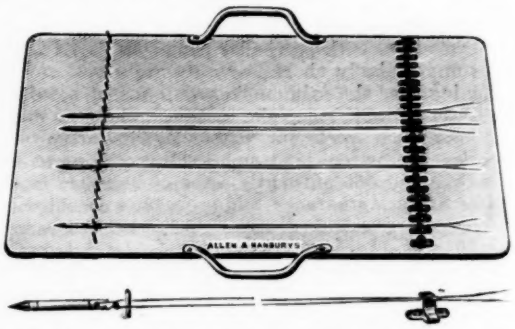
To general pathologists as well as to histologists the name of Maximow suggests original and erudite work. When he died in 1928, at the early age of 54, Maximow was writing a book of histology, and he had already progressed far with the work. He had completed the sections on the male and female generative organs, the urinary tract, the organs of special sense and epithelium, and he left in manuscript form the sections on the blood and connective tissue, the gastro-intestinal tract, the blood vascular and lymphatic systems, the spleen, the integument, and the mammary gland. Prof. Bloom, after Maximow's death, undertook the task of completing and editing the work. In this he was assisted by Prof. Herrick, who contributed much to the section on the nervous tissue, by Dr. N. Hoerr, who wrote the description of the suprarenal bodies, and by many others of Maximow's colleagues, including Prof. Bensley. Some assistance in the method of dealing with the various sections was moreover obtained from the 1918 Text-book of Histology in Russian. The final product is worthy of the name under which the book appears, and Prof. Bloom deserves gratitude for the way he has accomplished his task. Readers will naturally turn to the descriptions of the blood and connective tissue, since Prof. Maximow was an acknowledged authority on these subjects. They are clearly and convincingly written. No less sound in their teaching are the various parts of the book which have been written by the editor and his colleagues. The work is well illustrated and a few well-chosen key references to recent important works are inserted.

The book should take a leading place as work for reference and as a text-book for the advanced student.

NEW INVENTIONS

A TRAY FOR RADIUM NEEDLES.

THE tray shown in the illustration, which has been made to my specification, has proved useful for carrying radium needles that are threaded prior to sterilisation. It is of metal, 15 inches long, and including the side handles, 12 inches broad; the angle at which the handles are placed enable it to be completely immersed in 1 inch of fluid. Each needle with its thread is held by a peg and a spring clip, of which there is a row of 24 near each end of the tray. The needles, after being threaded, are placed so that



one of the double threads issuing from the eyes passes over each side of a peg; the threads are then pulled taut and fixed in the corresponding clips at the other end of the tray. The pegs and clips are placed so as to take threads of not less than 10 inches in length, but the tray can of course be made so as to accommodate needles with shorter threads. If the threads are knotted a little distance from the needles, it is simpler to draw the knots, rather than the eye ends of the needles, up against the pegs. The advantages of this tray are that on each one 24 needles can be carried, sterilised, and counted with ease and convenience, and with a minimum amount of handling. Entanglement of the threads is avoided, and only a very small depth of fluid is required for sterilisation—an important point if this is effected by immersion in spirit.

The tray has been made for me by Messrs. Allen and Hanburys, Ltd., Wigmore-street, London, W.

EDGAR FRESHMAN, F.R.C.S.

London Hospital.

THE LANCET.

LONDON: SATURDAY, JULY 11, 1931.

THE CENSUS OF 1931.

TEN years ago, in these columns, it was our pleasant duty to commend the Registrar-General for such prompt publication of the preliminary results of the thirteenth census. The record then established of a summary made public within three months of a collection of the returns has been beaten, for the preliminary results of the census of 1931 have appeared this week, while the returns were not available until the end of April. The total population enumerated at midnight on April 26th, 1931, amounts to 39,947,931 persons, the largest number hitherto recorded in the history of census-taking in this country, exceeding the numbers returned at the census of 1921 by 2,061,232 persons, and corresponding to an intercensal increase of 5·52 per cent. This percentage increase, however, with the sole exception of the increase noticeable for the decade 1911–1921, is only the half of any previously recorded. But the low rate of increase will come as no great surprise to students of the vital statistics of this country familiar with the substantial reduction year by year in the national birth-rate. The total births registered during the decennium 1921–1931 are no less than a million and a quarter fewer (or 16·3 per cent.) than the numbers recorded during the period 1911–1921—a period, it will be remembered, when the birth-rate declined to the lowest level ever recorded in this country. In this connexion the Registrar-General comments: "The full significance of the fall will be but dimly appreciated for many years to come; any temporary satisfaction felt in a reduction of the number of unproductive mouths to be filled during the present period of economic distress must sooner or later be qualified by a realisation of the profounder secular issues involved. The births of to-day govern the population of the future; and just as the nation which faced the upheaval of 1914 to 1918 was the product of the birth-rates prevailing towards the close of the last century, we are now observing the conditions which will shape the generations charged with the national destiny in the latter part of the present century." This unprecedented fall in the number of births during the decade is partially compensated for by the fact that, during the period under review, the numbers of deaths recorded were more than half a million fewer than those recorded during either of the two preceding decennia; in other words, allowance being made for the increasing age and numbers of the population exposed to risk, these figures represent a reduction in mortality of about 20 per cent. by comparison with the mortality figures for the decennium 1911–1921.

Turning to consideration of population variations in geographical sections of the country, in each of the regions selected for tabulation, with the single exception of South Wales, the population of 1931 in each section exceeds that recorded in 1921, the variations ranging from an increase of 10·5 per cent. in the South-Eastern Section, to a decrease of 3·6 per cent. in South Wales (Region W.1). It is significant to note that the areas associated with mining and the heavy manufacturing industries, which showed the largest population growths during the period 1911–1921, now find themselves, notwithstanding the higher birth-rates characteristic of these areas, relegated to the bottom of the list of increases of population during the decade 1921–1931. There are manifestly steady, though comparatively small, increases in the urban as compared with the rural elements of the population, though, in the opinion of the Registrar-General, "the latest record suggests almost that rural development is now materially in excess of urban." According to the preliminary figures, the population of the Administrative County of London has decreased by 2·0 per cent., while that of Greater London has increased by 9·7 per cent., and now totals 8,202,818 persons. The Registrar-General comments at length upon these changes, and is of the opinion that the London area is growing, not at the expense so much of rural areas as of the provincial towns, particularly those of South Wales and of the North of England. Of 1120 urban administrative areas, 113 had enumerated populations exceeding 50,000 in 1931, and these in the aggregate accounted for one-half of the total population of the country. Thirteen new areas find themselves included in the category of great towns. In the London area West Ham, East Ham, and Leyton all show decreases of population; the same is the case in Lancashire, in towns such as Barrow-in-Furness, Burnley, Salford, Wigan, Blackburn, Oldham, Bolton, and Rochdale; and in South Wales, in the Rhondda and Merthyr Tydfil; while seaside resorts like Eastbourne, Great Yarmouth, and Hastings show decreases of 7·4, 6·5, and 1·9 per cent. respectively.

The preliminary report concludes with brief reference to the ratios of males to females for the country as a whole and for individual areas. Here it is seen that sex distribution varies widely in different parts of the country—no novel feature, for relative positions of different areas have not been profoundly affected by any changes in proportions. The greatest preponderance of females is to be found in the South-Eastern Metropolitan region, while at the other end of the scale lies South Wales, where the males outnumber the females—though here it is to be remembered that the male excess is now lower than it was in 1921. The figures are, of course, provisional, but judging by past experience no material discrepancy is to be anticipated between those now before us and the results which will appear in the final census volumes. They provide a foretaste of the valuable data concerned with tracing the eddying tides of humanity which only a vast national stock-taking can provide.

THE FUNCTIONS OF A MEDICAL SOCIETY.

Dr. RAYMOND CRAWFURD, in his opening address at the Harveian Society's centenary [1] stated that the functions of a medical society were, primarily, the diffusion of knowledge; as a necessary preliminary to that end the acquisition of existing knowledge, and (to a limited extent) the creation of new knowledge. Different societies, according to their particular constitutions and needs, perform these functions in different ways along different lines, the difference being chiefly in scale and method. We publish in the correspondence columns of this issue communications from three medical men who, from their interest in collective medical effort and the services that they have rendered to it, are exceptionally well qualified to speak on this subject. "A," in a comprehensive survey of existing medical societies, suggests a classification into three groups according to degree of specialisation, with hospital societies as a fourth group. He points out that the work of diffusing knowledge from the centre to the periphery is performed by meetings and discussions, by the publication of transactions, and by the maintenance of special library and translation services. He especially stresses the value of clinical meetings, asserting that the medical society affords to the practitioner a unique opportunity of securing advice on difficult cases, of enlarging his clinical knowledge and of developing his intellectual power by the difficult work of presenting cases. The general practitioner, he states, must possess a rich harvest of clinical material, and medical societies offer an easy and ready medium for the propagation of this knowledge. He observes rightly that one of the most promising roads of advance in medicine lies in the careful and accurate observation, annotation, and presentation of clinical work. He commends also the intimate friendly atmosphere of the small local society, a point which is taken up again by "C" in his insistence on the value of the collective expression of the views of local practitioners in any area. "B," on the other hand, emphasises the value of tradition, which he holds to be the chief element in the success of at least one hospital society. The traditional interest taken by students in the society ensures, he says, a much more active discussion by all ranks than is usually heard elsewhere. The meetings which are successful at other societies are, he writes, those at which some great contributor to medical knowledge (or his deputy) discusses his own work. Turning to a few small but very important details, he urges upon the executives of societies to ensure that foreign speakers are properly interpreted; that all speakers be made to speak up, and that all lecturers who illustrate their remarks should make sure that their illustrations are boldly set out and plainly visible at the back of the room. He points out that the value of a clinical evening can be much enhanced by the skilful selection of a small number of cases, so as to present a wide field of interest.

Dr. CRAWFURD and our correspondents have between them left very little to be said about medical societies. It is perhaps arguable that they do not attach full weight to a factor which may be more important than anything else. Admittedly medical societies fulfil an indispensable work in propagating knowledge in printed form, whether it be in their own transactions or in books and periodicals. Nevertheless, in all the functions of a medical society the factor of personal contact is the one which supplies the dynamic. It is possible that a few research workers derive their creative inspiration from themselves or from one or two intimate contacts, but for most men the incentive to create, to collect, and to diffuse knowledge arises from the desire to serve, to strive with, and to emulate their fellows. A solitary job is to most men a hard discipline, an obligation rather than a pleasure. The member of a live medical society—and more so the member of two or more societies—feels that his job is not solitary; that he shares it with many others whose minds are like his own. Every member of a lively medical society has a real chance of attaining that invaluable prize, a life-long working friendship with one whose approach to life and medicine is absolutely congenial to his own. This consideration explains the importance of tradition, stressed by "B," for tradition is transmitted personal influence. It explains the intrinsic interest, also mentioned by "B," of a lecture by one of the great masters of the art and science of medicine. It explains the unique value of the clinical demonstration, and interprets more kindly than Dr. CRAWFURD the attraction of the dinner meeting extolled by "A."

Moreover, it throws a sidelight on the rule of an old Gloucestershire Society, quoted by Dr. CRAWFURD, that no new member should be admitted for seven years to come whose age exceeded 40—a rule with which Dr. CRAWFURD hinted his sympathy and "B" expressed his profound concurrence. It is true that the official administration of societies tends to get far too much into the hands of the older members. Nevertheless, there are many men even under 40 whose appointment to office would not contribute greatly to the animation of a society, and many of advanced age whose deposition under such a rule would be an irreparable loss. Surely in the sphere of personal dynamism, as in that of the intellect, age is not measurable by years. Just as the "mental age" of many persons never exceeds 12 or 14 to the end of their days, so the social age of many valuable and venerable officers of medical societies remains always at a vigorous prime. The influence of the best, such as HUNTER and HARVEY, has survived to this day.

[1] THE LANCET, June 13th, p. 1275.

SOCIAL PSYCHIATRY.

THOSE who try to educate the public in mental hygiene stress the high percentage of recoveries in mental hospitals and the importance of early treatment. They are also courageously working along many different lines to teach the far more difficult lesson that the only sound way to mental hygiene is preventive. This ideal will be stimulated

by study of the Morison lectures for 1931.[1] Dr. D. K. HENDERSON argues with vigour and sound reason. His comprehensive essay contains much controversial matter but will bring encouragement and stimulation to all who read it, however much they disagree with some of the author's contentions.

One of the points which will provoke discussion is the plea that mental hygiene should be placed on the same footing as physical hygiene, in line with the control of infectious diseases and the betterment of living conditions. To this end Dr. HENDERSON urges the centralisation of control in public health officials. He wishes to extend the term "public health" beyond its essentially physical meaning of to-day, to cover all means for preventing mental disease and defect. It is often argued that the aggregate recovery-rate in the mental hospitals of the country shows no appreciable tendency to rise, and that therefore psychiatry is making no progress. Even the Board of Control, he remarks, has expressed itself as disconcerted, and suggest that the reason lies in the more rigorous standard of recovery now demanded. In his view the reason is that, like all other hospitals, the mental hospitals are dealing with end-results, much damage having already been done. "We must get in at the beginning," he says; "medically, socially, economically, it is better to centralise on the recoverable than to care through a lifetime for those whose illness has been allowed to develop past all chance of betterment." Psychiatry he regards as a social and public health problem, to be debated in the clear light of day rather than behind the high walls of an institution. It needs the coöperation of all, medical and lay, who really have at heart the welfare of humanity, and unlike the study of tuberculosis or sanitation, psychiatry is intensely individual and personal and strikes at the liberty of the subject. This broad conception of psychiatry passes over in its first stride those who are already cared for in mental hospitals and institutions for the mentally deficient and concentrates attention on the socially inefficient, the unemployable, the epileptic, the habitual offender, the prostitute, and all others who have not been able to fit themselves harmoniously into the fabric of society. In the words of Dr. O. LEWIS, "the problem of mental inefficiency . . . must be one of the major social problems which a civilised community may be called upon to solve." Dr. HENDERSON insists vehemently that all forms of disordered conduct are due to inability to adapt; that institutions are very limited in their possibilities, and that a much more hopeful approach is to tackle those who have not yet developed any outspoken defect. Every case of disordered conduct must undergo an exhaustive examination to determine the relative importance of the various ætiological factors, hereditary and exogenous, and how they can be modified. He strongly condemns the fatalistic attitude of those who explain every aberration on an hereditary basis and abandon hope for the inefficient who has an alcoholic uncle or some relation who is a ne'er-do-well. He holds KRAEPELIN's view that heredity is a fact of experience, not a law which holds in every case. The avoidance of the propagation of defective stock, is, he protests, a matter for the individual conscience and not for legislation; the public should be educated to realise the tribulations which it brings to both parents and offspring. Rather than allow the sterilisation of defectives, he would strike at alcohol and venereal disease. He approves of our comparatively mild restrictive legislation on alcohol, but recognises that a greater factor in its control has been the higher standard of living and the more rational outlook which has grown up in this country. The public are understanding more and more clearly that alcoholism interferes with efficiency and brings distress, and public education must be directed to spread this knowledge. Venereal disease should, in his view, be combated along the same lines.

Dr. HENDERSON does not spare his colleagues. Side by side with efforts to educate the public and reconcile psychiatry with public activities, the profession must, he insists, put its own house in order and marshal its ranks more closely. Instead of maintaining an obscurantist attitude to psychiatry and keeping the psychiatrist in the background as an ogre with which to frighten recalcitrant patients, all ranks of the profession should make an effort to acquire a working knowledge of psychiatry. To this end he advocates the more comprehensive training of the medical student and closer coöperation between the general hospital and the more specialised departments of medicine. The student should be given a clearer idea of the normal and should be made familiar with the danger-signals and the early cases. Specialisation may prevent the conception of the patient as a whole by its over-emphasis on physical health. As machinery for the advancement of mental hygiene in the community, he desires nursery clinics, where children up to the age of five can be observed; child-guidance clinics for the maladjusted older child; and out-patient clinics for mental patients, in association with general hospitals and in close coöperation with schools, charitable organisations, law courts, industrial concerns, and mental and general hospitals. He does not hold it necessary to wait until a certain number of beds are provided in the general hospital; the establishment of more clinics of all kinds would, he thinks, create a further demand for the type of clinic that proves most useful. Every local mental hospital could offer some help in the way of coöperation with the local general or cottage hospital. The thesis of these lectures is that a psychiatric clinic for both in-patients and out-patients is the keystone of the psychiatric arch. With such clinics, numerous on the Continent and in America, this country is still inadequately supplied.

[1] Edin. Med. Jour., May, 1931.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE. During a visit to Eastbourne last week the Prince of Wales laid the foundation-stone of the new buildings of this hospital.

ANNOTATIONS

DISCIPLINE UNDER N.H.I.

INSURANCE committees and approved societies are fully justified in drawing attention to the cumulative evidence of the abuse of national health insurance benefits. In so far as medical practitioners may be found to blame, the medical profession has a strong incentive to join in restraining any wastage of the approved societies' funds. Those who favour the principle of salaried service will be helped in argument if the panel practitioner shows himself careless of the prescribed Terms of Service which he has undertaken, or half-hearted in his resistance to pressure from insured persons. Public opinion, it is safe to say, is as yet no more attracted by the idea of a salaried service than is professional opinion. But if avoidable abuses continue, and if the Minister of Health is driven to take drastic action, that idea is certain of advancement as a potential remedy. It therefore seems worth while to re-examine the situation somewhat closely. For this purpose we offer on p. 87 a study of a sample of the disciplinary work under the National Health Insurance Act as revealed in a single sitting of the London Insurance Committee.

THE KETOGENIC DIET FOR EPILEPSY.

THE method of treating epilepsy by the ketogenic diet is not easy to master, nor is its theoretical basis established. The process of maintaining a ketogenic ratio, once established, by food adjustment is laborious for the physician and the cook, and unpalatable, if not actually unpleasant, for the patient. Is it worth it? Dr. F. B. Talbot, in a book reviewed elsewhere in this issue, quotes the results obtained by himself and three other observers, covering in all a series of 208 epileptic children at the Massachussetts General Hospital. In rather less than 40 per cent. of these children, application of the diet was followed by complete relief of symptoms. Among adults, a lower percentage must be expected. It is agreed that the method must be thoroughly understood and conscientiously carried out, or left alone altogether. The only definite contra-indications would appear to be a low grade of mentality, or an unwillingness to coöperate on the part of the patient. The degree to which the diet should be pushed, and the duration of the treatment are indicated by the fit incidence. If the protein and vitamin content of the diet are carefully watched, and a small dose of calcium be added as a precaution, Dr. Talbot believes that prolonged ketosis has no prejudicial effect on growth or development, nor need treatment be interrupted in the case of intercurrent disease. He gives a clear account of the metabolic processes involved in the production of ketosis and of the maintenance of the requisite ketogenic ratio by food adjustment. Once the principles have been grasped, their application is made easy by an admirable series of tables. The normal height and weight of children of various ages and of adults are given, and the important point is made that in calculating caloric requirements, the normal weight of a patient of the given age and height should be taken. Otherwise the obese child will receive extra calories which he does not need, and the thin child be deprived of calories which he does need. Once the total calorie requirement has been determined by this and other considerations in the individual case, the daily ration of protein, fat, and carbohydrate needed to arrive at the ketogenic ratio aimed at can be calculated from a special table derived from previously unpublished data by Luther and Bartlett. Tables are also supplied to show the composition of the various foods, together with their ash and vitamin contents, and finally a series of complete specimen dietaries, so that all the material for building up a diet on this basis is here provided.

Why the ketogenic diet should prevent the occurrence of attacks is not known. Whether acetone or some other product of incomplete fat metabolism has a specific action, whether the diet causes a shifting of the acid-base balance in the blood or a lessening of its CO_2-combining power, or whether the lowered blood-sugar content is a factor—these things remain a mystery at present. The position as to blood-sugar is anomalous in that ketosis with a lowered blood-sugar prevents fits, while the rapid hypoglycæmia that follows insulin injection often gives rise to fits. In the June issue of the *Bulletin* of the Johns Hopkins Medical School, Dr. E. M. Bridge and Dr. L. V. Job discuss the mechanism by which the ketogenic diet acts. They incline to attribute the benefit to the régime to the removal of extracelluar fluid from the body, and to intensify this action they recommend a preliminary fast of five days' duration before starting treatment water only being allowed. No one who has studied the recent work of J. L. Gamble, I. McQuarrie and Temple Fay can ignore the importance of dehydration in the treatment of epilepsy. As Dr. Talbot himself points out, low salt diets, shift of the acid-base balance of the blood towards the acid side, the production of ketosis, whether by fasting or by the use of a special diet, limitation of the fluid intake, and the use of cathartics are all procedures which have, or have had, the reputation for controlling epileptic attacks, and they all have one common effect on the tissues, dehydration. It may well be that the elaborate calculations and devices that are involved in the production and maintenance of ketosis achieve their object in epilepsy solely by lessening the body fluids. If this be so, we may hope that some method more simple and more congenial to physician and patient alike may come to hand.

MATERNAL MORTALITY AGAIN.

THIS year, for the first time, the National Conference on Maternity and Child Welfare was held elsewhere than London, the place selected being Cardiff. The fine City Hall provided an admirable setting for the meetings, any acoustic defects having been largely obviated by the use of microphones. The Principality was well represented among speakers. The presidential address was delivered by Mr. John Rowland, Chairman of the Welsh Board of Health. Speaking of maternal mortality, he said that to those who talked about the "irreducible minimum of maternal deaths" or the "normal order of things" he commended the study of the interim report of the Committee on Maternal Mortality and Morbidity, published last year. From the investigations there recorded it appeared likely that at least one-half of the deaths among women in childbirth could be prevented if conditions were more favourable. Efforts must extend in many directions. The obstetric training of medical students must be improved and the midwifery service developed. There must be more antenatal supervision, and consultants and hospital

beds must be available for the difficult cases. There was room also for extended educational measures, wisely directed, to inspire the patient with confidence. He welcomed the presence of the conference, especially as a stimulus to Welsh endeavour, for the maternal mortality-rate of Wales is about 40 per cent. higher than that of England. This may be partly accounted for by the rugged, mountainous nature of the country, the sparsely populated areas with difficulty of transport, and the exceptionally hard conditions under which the industrial population in the mining valleys of the south are living.

Speakers at the conference showed a notable consensus of opinion in favour of giving the general practitioner a central position in any national maternity service. Dr. Gilbert Strachan (Cardiff) pointed out that all the schemes put forward by different groups of people have much in common, all concentrating on the necessity for improved obstetrical education of medical students and midwives, the importance of antenatal supervision, the necessity for more hospital accommodation for maternity cases, and a proper consultative service. Sir Ewen Maclean (Welsh National School of Medicine) and Mr. J. Bright Banister (London) both deprecated indiscriminate and ill-considered criticism of the medical profession, pointing out that teachers of obstetrics have been fighting for generations to obtain a larger proportion of the students' time for obstetrics and gynæcology. Sir Ewen Maclean suggested that the real difficulty of shortage of teaching material might be partly met by a system of conjoint teaching of medical students and midwives, to the advantage of both. Mr. Banister, while emphasising the importance of a postnatal examination within three weeks after childbirth, expressed his belief that it is erring on the side of too much protection to insist on regular postnatal supervision for every patient, though, of course, any disablement complained of should be corrected. Too much may, he thinks, be made of slight anatomical deviations from the normal which in no way incapacitate a woman from being a useful member of society. Similarly, Dr. W. G. Savage (Somerset), speaking at a joint meeting of the Association of Maternity and Child Welfare Centres and the National Baby Week Council, questioned the need for submitting every pregnant woman to two antenatal examinations by a doctor. The danger of creating a pathological atmosphere, detrimental to the patient's peace of mind, must not be ignored. He holds the midwife to be the pivot of the maternity service, and therefore lays great stress on improving her capability and status. In Somerset he has introduced a system of flying clinics, under which an experienced woman obstetrician visits any district to which she is called by a midwife or health visitor for help or advice. Dr. Thomas Evans (Swansea) thought that in towns a more efficient service would be secured by the employment of specialists rather than general practitioners, basing his argument on the satisfactory results obtained in certain institutions and districts where teams of specialist workers have carried on large practices with a maternal mortality-rate of under two per 1000. Dr. F. Ivens-Knowles (Medical Women's Federation) emphasised the importance of skilled antenatal care, and said that an investigation of many institutions showed that the mortality was ten times as high among those of the patients admitted as emergency cases who had not had such care before admission. A number of speakers called attention to the fact that safe childbirth depends on other factors besides obstetrics. Dr. Garland Collins (West Ham) mentioned the prevalence of drug-taking on the part of women and its disastrous effects; Dr. G. C. M. M'Gonigle (Stockton-on-Tees), whose paper was read by Dr. Ralph Picken, attributed particular importance to the nutrition of the expectant mother, and had had encouraging results from antenatal administration of vitamins A and D to the women. Dr. Dunstan Brewer (Swindon) emphasised what previous speakers had already indicated, that the presence or absence of confidence exercises a powerful influence on any woman's chances of a successful and uneventful labour. His views, with those of Mr. Bright Banister and Dr. Savage, noted above, are shared by all experienced obstetricians and midwives, and suggest that constant reiteration of the high mortality and morbidity associated with childbirth has its dangers. While it may be desirable to stimulate public concern, in order that more money shall be available for social services to combat these evils, the prospective mother is likely to be disheartened. It is impossible to represent a process as physiological while at the same time insisting that for months before and after, as well as during, parturition, the woman must be under constant supervision. There is sound sense in the view that postnatal attention should be reserved for those who complain of any disablement.

THE LIMITS OF PREVENTIVE MEDICINE.

It is refreshing, in times when the jargon of health propaganda far outstrips its accepted principles, to hear a medical officer of health admit that the greatest obstacle to the successful practice of preventive medicine is our lack of knowledge. At the Congress of the Royal Sanitary Institute, held at Glasgow this week, Dr. Ralph Picken, of Cardiff, showed that whatever the aspirations of local authorities, the contribution of the newly acquired municipal hospitals to preventive medicine must at present be confined mainly to the provision of opportunity for scientific research and teaching. The most that can be done is to provide ample accommodation for observation in the attempt to detect at an early stage conditions which are curable only if treated before they have reached a crucial phase. Dr. Picken pointed out that in all countries far more money is spent, and under present conditions must be spent, on the curative than on the purely preventive medical services. Even in Russia, where the revolution was followed by a determination to alter the old bias in the direction of prevention, the distribution of funds for health work in 1925 was 77 per cent. for hospitals and out-patient departments against 23 per cent. for protection of motherhood and infancy, sanitary and hygienic education, sanatoriums, campaigns against contagious diseases, psychiatric treatment, and so forth. Even a communist state then had evidently found it necessary to spend most of its available funds on treatment, in spite of its lip-service to prevention.

In order to ascertain the type of case for which provision must be made in municipal hospitals, Dr. Picken reviewed first the demands made on the poor-law hospitals which they replaced, and, secondly, the waiting list on May 11th, 1931, of the Cardiff Royal Infirmary, on the assumption that this waiting list would be typical of voluntary hospitals of this class. The Royal Infirmary (apart from its convalescent home and a maternity branch) contains 380 beds, of which only 105 are in medical wards. It is thus not because an undue proportion of beds are allocated to medical treatment that only 24 patients are awaiting

admission to medical, against 1543 to surgical beds. The great majority (77 per cent.) of waiting patients suffer from diseases such as hernia, hæmorrhoids, appendicitis, gastric and duodenal ulcers (52 bound for surgical, only eight for medical wards), cataract, chronic diseases of the ear, nose, and throat, and endocervicitis and allied disorders. It is in the relief of such patients, for whom voluntary hospitals will always find it difficult to provide enough accommodation, that Dr. Picken sees one of the main functions of the municipal hospitals, for in the widest connotation of the word such treatment is preventive, if only of more acute disorders. If all medical officers of health advise their authorities in this sense, coöperation between the two kinds of hospital should lead to the foundation of a science of preventive medicine on a broader basis than has hitherto been possible and to its speedy development.

THE JEWISH DENTAL CLINIC.

THE annual report of the work of the Jewish Health Organisation appears under the title "Public Health Work in the Jewish Community." It includes many interesting activities such as public lectures, inspection of evening schools, and the well-known child-guidance clinic. It is satisfactory to learn that the society has been restored to solvency and even provided with a surplus. The most recent development is a dental clinic for adolescents, which was opened on Nov. 20th last. The committee felt that much of the valuable work of the school dental service failed in its object owing to the lack of supervision for adolescents. Even when the young person is old enough to join the National Health Insurance scheme, dental benefit is only provided by some approved societies, and then after an interval of several years. The Jewish dental clinic, called the "Prunella Treatment Centre," holds sessions in the evening after normal working hours in an attempt to fill this gap in the health service of the country. Patients are seen by appointment, and every member under the scheme is inspected at least once a year. Inspection and treatment are combined with dental hygiene education. The clientèle is obtained through societies and clubs, the affiliation fee being provisionally fixed at a shilling a year, with a minimum of £2 per institution. The clubs are visited by the dentists to give talks on oral hygiene and to make inspections and arrange appointments for those requiring treatment. Already seven clubs have been visited and 166 young people examined. Of these no fewer than 161 required treatment, thus indicating the need for the service.

SUPRARENAL CORTEX IN ADDISON'S DISEASE

THE discussion on hormones and the diseases of the ductless glands at the recent meeting of the Association of American Physicians centred largely on the effect in Addison's disease of the potent hormone extracted from the suprarenal cortex. Attempts to elucidate the inter-relation of the adrenal and the thyroid glands by giving the extract to patients with Graves's disease were also described. So far, however, the effect on these patients seems to have been mainly subjective—i.e., they felt better but their metabolic rate was unchanged. With regard to Addison's disease not much progress seems to have been made since we last commented on this interesting work.[1] Papers were contributed by Dr. W. W. Swingle and Dr. J. J. Pfiffner, of Princeton, who described the method of extraction which they have found to be the most effective after extensive trials, and by their various clinical collaborators. There seems still to be considerable difficulty in obtaining an adequate supply of the extract and treatment has had to be discontinued in urgent cases for lack of it. Dr. L. G. Rowntree recorded the use of this treatment in 20 cases of Addison's disease, with five deaths. Two patients who had adequate treatment did not respond. Those who improved showed gain in weight and strength, disappearance of anorexia, nausea, and vomiting, decrease of pigmentation, gain in sleep, change of outlook, and desire to go back to work. The hormone was administered intravenously, the dosage being 3·5 c.cm. in a day. The preparation used by him had some tendency to sensitise the patients to adrenalin. Dr. G. A. Harrop (Baltimore) reported definite improvement with the extract in three cases, Dr. Allbright (Boston) in one case, while Dr. T. R. Boggs (Baltimore) described his success in one case with the whole gland, administered in a capsule insoluble in the stomach. The patient was a Scotch woman living in Jamaica, and her pigmentation had been so deep as to cause social embarrassment to her husband. Within four weeks after beginning treatment, which also included large doses of calcium, the blanching of her skin was considerable and a report received after her return to Jamaica was satisfactory. Dr. Rowntree reiterated his belief that the extract from the cortex is a potent remedy for Addison's disease, specific though not infallible, but he emphasised the need for many more records of cases before this form of treatment can be evaluated.

[1] See THE LANCET, 1930, i., 652.

EMBRYONIC INJURIES.

THE late Dr. T. S. P. Strangeways evidently had a sure instinct when he saw towards the end of his life that tissue culture was likely to be a valuable weapon in experimental pathology. Under the guidance of Dr. H. B. Fell a number of valuable researches on normal growth and the mechanism of calcification have come from the laboratory which he founded. One of these is a singularly interesting contribution[1] by Dr. Janet S. F. Niven on the healing of wounds in the rudiments of bones, isolated from the embryo and allowed to grow and differentiate in tissue cultures; what the tissues do is therefore determined by themselves and is not subject to any influence from the rest of the embryo. If the femur from a five-day chicken embryo is cut across and the ends left in apposition, the wound is healed at once by proliferation of the cartilage cells and in 24 hours no trace of the cut can be seen or found in histological preparations; later on, normal differentiation of the cartilage occurs and bone begins to form in the usual way. In the early stages, therefore, cartilage cells have a remarkably high capacity for repair. But this is soon lost. If a femur rudiment from a six-day embryo is similarly divided across the shaft, the cartilage immediately adjacent to the cut undergoes some change which makes it opaque instead of semi-translucent, and although the two halves of the rudiment go on differentiating normally the cartilage does not unite. The site of the cut remains obvious and is outlined on either side by a zone of degenerated cartilage cells. The fragments are united and an effective mend made by proliferation of the periosteal cells and the neighbouring connective tissue, aided sometimes by an ingrowth of the osteoblastic layer of the periosteum and the production of osteoid

[1] Jour. Path. Bact., 1931, xxxiv., 307.

tissue. The embryonic limb in fact does what the adult body does; if it cannot achieve its end by one means it does it by another. In rudiments from older embryos in which a bony sheath is already present the cartilage takes no active part in repairing a fracture. Indeed the osteoblastic tissue which comes in through the gap takes an active part in bringing about the absorption of the cartilage, which can take place without the invasion of blood-vessels.

The further development of these injured rudiments proceeds in a normal way and a continuous sheath of periosteal bone completely covers the site of the injury. The morphological differentiation is also normal, and from an injured rudiment of, for instance, the femur a properly shaped bone emerges with head, neck, and condyles as they should be. In the chances of tissue culture it often happens however that the two fragments are not in perfect alignment and the shaft into which they develop is in consequence curved. It is of exceptional interest to learn that the formation of periosteum and osteoid tissue is considerably greater in the concavity than on the convexity of the head—an observation which is difficult to harmonise with the common belief that the similar condition seen in rickets is due to pressure from use.

THE CONTROL OF MALARIA IN SOUTH AFRICA.

WE learn from a South African correspondent that Prof. N. H. Swellengrebel, of Amsterdam, who was called into consultation by the Government of the Union of South Africa for advice on the presence and conditions of endemic malaria in Natal and the Transvaal, has presented an exhaustive report. He is hopeful that malaria control in South Africa will be achieved more simply and cheaply than has been anticipated. The main carrier of the disease in the Union, *Anopheles costalis*, is, fortunately, highly selective in its breeding places, choosing muddy pools and drains open to the sunlight in preference to swamps, morasses, and rivers. This predilection makes the control of breeding places an economic possibility. Whereas it was feared that larvicides would have to be used lavishly over the whole countryside, Prof. Swellengrebel believes, as the outcome of careful investigations, that paraffin applied to comparatively few selected spots, easily identified, is likely to check the spread of the disease. One of the major recommendations is the use of malaria-tolerant native labour, to be drawn from highly malarious areas where investigation has shown that only the children suffer from the disease, adults being immune. A corollary of this recommendation is that no steps should be taken to reduce the incidence of malaria in these areas. Prof. Swellengrebel makes it clear that his advice is based only on present knowledge; any policy adopted must be flexible, since new facts materially altering the outlook may be revealed by research, which must be actively pursued. He estimates that malaria control in Natal will cost the sugar industry one-quarter per cent. of its gross income—an infinitesimal sum compared with the losses the disease has already caused the industry, and will continue to cause if not controlled. He points out that antilarval measures, although indispensable for the complete eradication of malaria, should not be regarded as the only means available for control of the disease in South Africa, and that there was no reason for discouragement if further experience should prove the impossibility of their general application. Besides *A. costalis* and *A. funestus* a third anopheles, *A. pretoriensis*, had once been found to be infected. This species breeds in swamps, and if subsequent research shows it to be a potent malaria-carrier, the methods of combating infections will be greatly complicated. It is likely, however, that the outcome of investigations now being made will confirm the evidence hitherto available, that the species is not a dangerous vector of malaria in South Africa. Among Prof. Swellengrebel's recommendations for Natal are the organisation of health committees, a centralised medical and hospital service for the whole sugar belt, a system of medical examination of recruited labour, government help for the provision of malaria-tolerant labour, an adequate quinine distribution, and instruction on malaria in native schools. For the Transvaal he proposes a unit for malaria control and research, a field station for malarial control, instruction of the public in general, especially of school-teachers and farmers' wives, by district surgeons and district nurses, and finally that natives in epidemic areas should be trained, as they are now trained in Natal, to initiate treatment in native reserves and to promote a knowledge of malaricology. The report makes it amply clear that no dread of malaria need prevent the settlement of people of European descent in any part of the Union otherwise suitable for their reception.

A PORTRAIT OF DR. ALFRED COX.

IT is intimated that Dr. Alfred Cox will retire from the position of Medical Secretary to the British Medical Association, which he has long occupied with distinction, at the centenary meeting of the Association in London next year. A group of the Association are arranging for the painting of a presentation portrait, and a general meeting of these members will be held on Saturday, July 18th, at Eastbourne, to elect an executive committee with the usual officers, and decide upon the organisation for the collection of subscriptions.

A SHORT COURSE IN TROPICAL MEDICINE.

THE authorities of the London School of Hygiene and Tropical Medicine announce that they are about to modify the post-graduate course in tropical medicine. The five-months' course of intensive study hitherto in force, followed by examinations first for the certificate issued by the school and then for the Diploma of Tropical Medicine of the Conjoint Board, has been found to impose an undue strain upon candidates. Many of the colonial governments have found it difficult to release their medical officers for a sufficiently long period to enable them to combine what is in effect six months' study-leave with a much-needed holiday in this country. Further, the requirements of the colonial service are so urgent that a demand has arisen for a short course of instruction for recruits about to proceed overseas. After consultation with the Colonial Office and the Conjoint Board, it has been decided to divide the course of study into two parts: a three-months' course of clinical and laboratory instruction and a two-months' course in tropical hygiene. Each course can be taken independently, and the Conjoint Board is arranging for an examination to follow closely upon each course of study. The internal school examinations will be discontinued, and students will be encouraged to sit for the diploma examination. Application has been made to the University of London for recognition of the revised course. The new three-months' course includes clinical tropical medicine, applied pathology,

medical zoology, and elementary bacteriology; the two-months' course includes instruction in the relation to tropical hygiene of bacteriology, medical zoology, anthropology, and vital and medical statistics. In order to meet the requirements of the modified course, the school has established a new division of clinical tropical medicine which can call on the combined resources of the Seamen's Hospital Society. The innovation will undoubtedly fill a need, and the facilities offered should make it easy for many more medical men and women to learn or revise the groundwork of tropical medicine, pathology, and hygiene.

CONTRIBUTORY SCHEMES AND HOSPITAL BENEFITS.

WHETHER a hospital contributory scheme should or should not guarantee definite benefits to the contributors is one of the most interesting problems which arises, if only indirectly, from a study of the replies received to a questionaire recently issued by the Central Bureau of Hospital Information.[1] It is not stated how many questionaires were despatched to those responsible for the management of contributory schemes and to hospitals interested in their establishment, but 456 replies were received, of which 126 were non-committal; 330 replies were thus available for analysis. Those replying were classified into four groups, of which Groups I. and II. embraced views based on experience of existing schemes, run respectively by outside organisations (Group I.) or by the hospitals themselves (Group II.); in Groups III. and IV. were included expressions of opinion from hospitals not at present associated with any contributory scheme, but favouring outside or inside management, respectively.

The questions asked included, among others, (*a*) the limits of income, if any, imposed on contributors; the majority favour a limit of £6 a week; (*b*) the weekly contribution—2*d*. or 3*d*. are the most popular figures; (*c*) the desirability of making payments out of funds raised by contributory schemes to members of honorary medical staffs; of those answering this question 109 objected to any such payment, while 41 agreed to the principle that payments might be made. In a number of schemes, however, the medical staffs are allowed to charge fees to all patients, whether contributors or not.

The most crucial of all the points at issue, however, arises indirectly from the question: On what grounds should the invitation to become a contributor be based? The subdivision in the classes (*a*) and (*b*) of each of the four groups is based on the replies to this question, of which samples are given. Broadly speaking, those advocating appeals on the grounds of insurance against illness in the future, of making sure of free treatment and maintenance in hospital for self and dependents, should illness occur, as well as on altruistic grounds naturally fall in each group into class (*a*), which provides, or aspires to provide, definite benefits to contributors; while those who advocate appeals entirely on altruistic grounds belong in each group to class (*b*)—those promising no stated benefits. It is interesting to note that of the 330 organisations classified 212 fall into Groups I. and II.—organisations with existing schemes—and among these 113 offer definite benefits, 99 offering no stated benefits. Groups III. and IV., hospitals with schemes only under consideration, include 118 hospitals, of which as many as 86 contemplate or recommend schemes offering definite benefits, only 32 believing in schemes which carry no stated benefits. It is recognised that the contributor may in any case have no legal right to treatment; but when the benefits of joining a contributory scheme are definitely stated, as they are in the leaflets issued in connexion with a large number of schemes, there can be no doubt that such statements provide some inducement to join. Where such inducements are offered it must be a matter of actuarial calculation, when dataare available, whether a weekly contribution of, say, 3*d*. a week is adequate to meet the benefits offered.

[1] Memorandum 38. Obtainable from the Director, Joint Council House, 12, Grosvenor-crescent, London, S.W.

ANNUAL HEALTH REPORTS FOR 1930.

WE publish in this issue the first group of notes on the annual reports of medical officers of health for 1930. They have an unusual interest since 1930 marks the eve of a new period of hope. Important legislation, notably the Local Government Act of 1929, began to operate on April 1st, 1930, while the Housing Act of 1930 and the Mental Treatment Act 1930, came into operation on Jan. 1st, 1931. Under the Local Government Act, the magnitude of the task of county councils and county borough councils must vary greatly, according as to whether they succeed guardians of the progressive or conservative type. Judging from the first reports to hand from the county boroughs the transfer of duties is taking place smoothly. The county councils have a task which will operate much more gradually. On all sides there is a desire to secure harmonious working with the voluntary hospitals and so to get the best possible value out of each hospital for the community. Under the Housing Act a determined attempt is to be made to get rid of slums and to rehouse the slum-dwellers. The five-year housing programmes, which are due from each local authority, will be studied and their progress followed by many not directly concerned with the district. Under the Mental Treatment Act it will be found that many authorities had in readiness for Jan. 1st, 1931, arrangements designed to bring close coöperation between mental and general hospitals, such as the establishment at general hospitals of mental out-patient clinics conducted by experts, and the provision of hospital wards for voluntary and temporary mental patients without the stigma involved by certification. The Registrar-General has not made his usual estimate of the populations for this the last year of the intercensal period. We shall shortly know how far the estimate used in 1929 and previous years deviated from actuality. Doubt was thrown on the accuracy of the last census from the beginning owing to the fact that it had to be taken at the end of June, and involved estimates of the holiday movements of the population. Several medical officers of health have always preferred to use locally made estimates and it will be instructive to see whether they or the Registrar-General have been nearer the mark.

LIVERPOOL ROYAL INFIRMARY.—With a total of 336 beds, 6850 in-patients were admitted last year, which, for the seventh year in succession, constitutes a record. Their average stay was 15·25 days, and their average weekly cost £2 15*s*. 10½*d*. There were 51,267 out-patients, again a substantial increase; they cost 4*s*. 5¼*d*. per head. The average cost per occupied bed was £145 13*s*. 7¼*d*. The total income of £51,925 fell short of the expenditure by £2646, and the accumulated deficit on the general account is now £35,895.

PANEL AND CONTRACT PRACTICE

PITFALLS OF PANEL PRACTICE.

A SAMPLE OF COMPLAINTS.

THE following paragraphs summarise a batch of 12 cases taken from the published proceedings (No. 6, dated June 25th) of the London Insurance Committee sitting to consider the Report of the Medical Service Subcommittee. Of these dozen cases, which give a cross-section of the panel doctor's work, five relate to allegations of irregular certification or other breach of regulations, five to complaints of delay or inadequacy of treatment, and two to minor matters. The broad result is that one practitioner is found grossly negligent, is severely censured and heavily penalised by deduction; two others are found to have broken the Terms of Service and are penalised in a lesser degree; the rest are either exonerated or not found so seriously to blame as to merit penalty. Even a brief summary of the cases must be somewhat diffuse if it is to show fairly the incidents and the different points of view upon which the London Insurance Committee is passing judgment. Reasons for setting them out in detail are given in our annotation columns.

COMPLAINTS OF IRREGULAR CERTIFICATION.

Of three instances in our sample one is an approved society's complaint that an insurance practitioner gave an insured person's wife a certificate dated March 3rd though he had not seen the patient for a fortnight. At the hearing it appeared that other certificates had been given irregularly. The practitioner said he had seen the patient on certain dates, but the patient's wife could not remember the particular days of his visits beyond the first two or three; she said she had herself been to the surgery to obtain certificates for her husband. The practitioner, whose good faith the Committee accepted, said he understood the local agent of the approved society called at the insured person's house every Wednesday and that the patient was concerned to obtain a weekly certificate on the previous day in order to substantiate the claim to weekly payment of benefit; in giving the certificates, his sole object was to assist his patient to obtain his money. The Committee points out that Rule 9 of the Medical Certification Rules forbids the practitioner, having issued a certificate under the Rules, to issue another without again examining the patient. This, they justifiably observe, is the essence of the system of certification under the Act—viz., that a certificate shall be issued only on a fresh examination of a patient. The facts were admitted as to three certificates. The practitioner's explanation was not accepted as an excuse for a violation of the Rules; he failed properly to appreciate that the certificate contained a statement of fact and he could not have been ignorant that he put his signature to statements which were not true. He committed a breach of the Rules and consequently also of the Terms of Service for Insurance Practitioners. He is to be warned of the necessity of strict adherence to the Rules and the Minister of Health is asked to withhold a sum of £2 from the money payable to the Committee with a view to that amount being deducted from the practitioner's remuneration.

Another instance related to three certificates dated Feb. 16th and 23rd and March 2nd issued by a panel doctor to the insured person's daughter without his having seen the patient within the previous 24 hours. The proceedings stated that the doctor seemed to think all would have been in order if he had inserted the date of the examination as well as the date of signature; he appeared not to be acquainted with the provision in the Medical Certification Rules that a certificate should be given either at the time of the examination or within 24 hours afterwards. He had also broken Rule 9 in giving a further certificate without a fresh examination. The Committee ascertained that the approved society agreed that there was no doubt that the patient was in fact incapacitated from work. The Committee did not question the doctor's good faith; it appreciated that he had signed merely in order to assist the patient to obtain his benefit and to have the necessary document available when the agent of the society called. As in the instance already mentioned, the practitioner is to be warned of the necessity of strict adherence to the Rules and there is to be a deduction of £2.

The third instance concerned a First Certificate issued by a practitioner's assistant, not bearing a stamped impression of the practitioner's name and address as required by Rule 7 (4) of the Medical Certification Rules. The Committee seems to have accepted the doctor's explanation (that this must have been due to his assistant's misunderstanding) and his assurance that the assistant had now been given adequate instructions. There was a further point as to a Final Certificate, personally given on Tuesday, March 31st, indicating that the insured person would be able to resume work on the following Monday. The approved society informed the insured person that, under the Regulations, it could not accept this certificate as a "declaration off" for Saturday, April 4th. The patient then submitted a Voluntary Certificate (Form Med. 40 F) in which the doctor said he had examined the patient on April 6th and that the patient remained incapable of work up to that day; this Voluntary Certificate was dated April 18th. The practitioner at first said he thought he must have filled up the Final Certificate of March 31st in error for an Intermediate Certificate. At the hearing he withdrew this explanation and said that, on further consideration, he thought that when he saw the patient on March 31st he found the patient's inflamed leg nearly well and believed the patient would be quite fit to resume work on the following Monday; he thought he must have realised that Tuesday, March 31st, was in the week before Easter and he must have had in mind the question of covering the holiday period. As to the statement in the Voluntary Certificate that he examined the patient on April 6th, he had accepted in all good faith the insured person's statement in this report and had assumed that the patient must have been seen by his assistant on that day. The Committee finds that he contravened Rule 6 which allows the doctor, if of opinion that a patient is not fit to resume work immediately but will be able to do so on the second day after the examination (in urban areas), to issue a Final Certificate and to enter in the appropriate space on the certificate the date when he thinks the patient will be fit to resume work. In the case under review the doctor issued the certificate on a Tuesday and intimated that the patient would be fit no less than six days later. Impressed, however, by the practitioner's frankness, by his assurance that this was the only certificate he had given of this nature, and by his statement that in giving certificates he does not allow himself to be governed by any but medical considerations, the Committee finds no other action necessary except to

impress on him the need of strict compliance with the Rules.

DEFAULT IN KEEPING RECORDS.

In one case the Minister of Health drew attention to a panel doctor's failure to keep proper medical records of the diseases and treatment of his insured patients as required by Clause 9 (12) of the Terms of Service. A Regional Medical Officer examined 223 record cards and found that only eight cards (or 3·58 of the whole) bore entries of attendances or visits for the year 1930. The Minister has considered exercising his power, under Article 41 of the Medical Benefit Consolidated Regulations, of withholding an appropriate portion of the practitioner's remuneration, but thinks it possible that the practitioner has not appreciated the full extent of his duties. No action is therefore taken at present except to warn the doctor that his cards will again be inspected in the coming 12 months and that, if they are then found improperly kept, a substantial sum may be withheld

QUESTION OF ASSISTANT.

One case, referred by the Medical Benefit Sub-committee, arose over the question of deduction from the practitioner's remuneration by reason of his having been without an assistant for part of the first quarter of the year 1931. The facts were apparently admitted and the practitioner seems to have agreed to the withholding of an appropriate sum. He had employed an assistant, with the Committee's permission, in a practice which showed 2678 insured persons on his list at the beginning of the year. His remuneration was calculated on the number stated. The assistant left his employ on Feb. 12th; no other assistant had been engaged and there appeared no intention to engage another until the end of September. He had been without an assistant for about one-half of the first quarter of the year, and he recognised that he was not entitled to remuneration for the whole of the quarter in respect of the additional number of insured patients included in his list by virtue of his employment of an assistant. The amount in question was £5 12*s*. 9*d*. and this is to be withheld. No question arises as to his remuneration for the second and third quarters of 1931, as the practitioner will be paid for these on the full number of insured persons on his list if the figure does not exceed the maximum permitted by the Allocation Scheme; if it does, his remuneration will be calculated on the maximum number.

COMPLAINTS OF DELAY AND INADEQUATE TREATMENT.

The five instances of complaints that a panel practitioner has been dilatory or inadequate in treatment of a patient are necessarily more vague than the foregoing instances where some specific allegation of a breach of rule or regulation has been in question. Disputes about treatment will naturally vary widely with the disputed facts of particular cases. The patient's relatives are unlikely always to agree with the practitioner as to the exact degree of urgency represented to him. It is easy to be wise after the event. In our first instance of this class a patient visits the doctor's surgery on the evening of Feb. 23rd complaining of general pains. The insurance practitioner's partner (called "Dr. A" in the proceedings) finds him slightly feverish and diagnoses influenza; he gives a certificate of incapacity on this ground next day. The patient's son says the doctor promised to call and see his father; the doctor denies the promise and the Committee thinks it very likely that no such promise was made. The patient remained in bed; nothing happened till Feb. 27th when he appears to have developed a form of delirium. His wife being ill in the house with bronchitis and pneumonia, his daughter, the only adult then available, became alarmed and sent for the police. The son was also called and found his father shouting and singing. The police sent him for his father's doctor. He went to the surgery at 8 P.M. (where patients were waiting), saw the dispenser and asked if the doctor could come at once as the case was urgent. The dispenser told the son to see the doctor personally and take his turn in the surgery. The son waited 20 minutes before he reached the consulting-room. It was not clear what happened next. The son said he told Dr. A his father was delirious and was going mad and that the police were in attendance; Dr. A denied that delirium was mentioned. The doctor seems to have said that he "did not deal with madmen" and that he did not "take orders from the police." The son went away; the police sent for the relieving officer; the patient was taken forthwith to hospital and died there on the 29th from pneumonia. The doctor had called at the house two hours after receiving the request, but had not told the son he would call. The Committee had to consider the allegation of the doctor's delay in responding to an urgent request for his services. The evening hours at the surgery were from 7 to 9.30; the doctor was very busy at the time and had to decide whether to interrupt work at the surgery or to defer his visit till that work was finished. Was the two hours' delay unreasonable? The Committee finds that Dr. A committed an error of judgment in not going to the patient earlier, but the incident is held to fall short of amounting to a failure to comply with the terms of service. The Committee adds that arrangements for dealing with urgent cases at this surgery should be improved, urgent messages should be brought to the immediate notice of the doctor on duty, that Dr. A was not so considerate or careful in inquiry as he should have been, and that this led him to make the error of judgment laid to his charge.

Another complaint of delay was complicated by the circumstances that the patient was dead when the doctor was summoned and that there is no Regulation which requires an insurance practitioner to attend for the purpose of viewing a dead body. The wife of the patient had gone to the surgery one evening and reported her husband seriously ill "being unable to breathe without great difficulty." She obtained a prescription for him but did not think it necessary that the doctor should call. Next morning the patient was found dead in his bed. A neighbour went to tell the doctor and the widow took a second message at 7.30 A.M. The practitioner replied (through a maidservant) that he could not call immediately and in any case could do little since he could not certify the cause of death; he would have to inform the coroner. An hour later the widow brought a note expressing doubt whether her husband was dead. She was informed that the practitioner had gone out and she was advised to obtain the services of another doctor The practitioner received the note later in the day but not before he had called at the patient's house. The Committee, though strictly perhaps exceeding its jurisdiction since admittedly there is no legal obligation on an insurance practitioner to attend a dead man, expresses the view that the common practice of the medical profession and the ordinary dictates of humanity suggest that a doctor would not hesitate to pay a visit even after the patient's death for the peace of mind and comfort of the relatives. In this sense the Committee thinks there was delay and that the practitioner's explanation

is unconvincing; but it is unable to find that the Terms of Service were infringed.

Another instance concerns a patient, aged 22, who had often been under the care of the insurance practitioner and his assistant (called "Dr. A" in the report) for gastric trouble. Early one Sunday last April the patient had an attack of severe pain in the stomach and told his father. The father had to go out to work; on returning and finding his son no better, he went to the surgery and saw Dr. A about 6 P.M. No request was made for a visit; the possible cause of the trouble was discussed and Dr. A prescribed a bismuth mixture and aperient pills, asking to be informed of the patient's condition next day. On the next evening Dr. A was sent for; he interrupted his surgery work to pay the visit. He examined the patient, prescribed, and again asked to be kept informed. He had a report next day and gave further advice. On the day following, Dr. A was telephoned for, visited the patient and advised his removal to hospital where intestinal obstruction was diagnosed. An operation was performed and strangulation of the small intestine was revealed. After the operation the patient collapsed and died; the coroner found death due to toxæmia following intestinal obstruction, combined with the shock of the operation. At the inquest the patient's father and mother for the first time expressed dissatisfaction with Dr. A's conduct, complaining that he did not call on the Sunday night. The Committee however finds that the father did not request a visit on that Sunday but was satisfied with a prescription. The Committee accepts Dr. A's statement that he would have gone if asked; it points out that he did go promptly twice when requested. Yet, while admitting that it is easy to be wise after the event, the Committee cannot entirely exempt Dr. A from criticism for not seeing the patient on the Sunday evening before prescribing. It is emphasised that the Terms of Service oblige a practitioner to visit any patient whose condition so requires. This means that a patient must be visited at his home, if his condition requires it, even though no request is made. Prescription without seeing the patient is naturally deprecated, though it is recognised that here Dr. A had previous knowledge of the patient's type of illness and was led to infer a recurrence. The Committee decides that there was no failure to comply with the Terms of Service.

Judged by the penalty, the gravest case before the Committee was one in which the practitioner discontinued treatment without warning. A lad, temporarily residing in London, was on the list of a doctor in Surrey. He was taken ill on March 4th and was visited next day. His mother explained his position in insurance; the boy's medical card was handed to the practitioner but not taken away by him. Influenza was diagnosed and an insurance certificate of incapacity on that account was given. On the 6th the doctor visited the patient and recommended removal to hospital; the mother demurred, saying she felt quite capable of looking after her son. That evening the mother sent a message reporting pain and asking for something to relieve it; the doctor advised a plaster and promised to call next day. He did not call till a day later (the 8th) when pneumonia was found to have developed. The mother had raised the question on the 6th of having the services of a district nurse but the doctor thought this unnecessary. On the 8th the question of a nurse was again raised; the doctor advised how to obtain a nurse and a nurse was obtained. The doctor promised to call next day but did not; the nurse advised he should be sent for. The doctor told the messenger (the patient's uncle) that he was too busy but would come the following day (the 10th). On the 10th the uncle visited the surgery as an insured person to obtain a certificate for himself. The practitioner asked him to tell the mother that he did not intend to call any more. The mother with difficulty obtained another doctor who ordered removal to a hospital. The mother reported the facts to the Surrey Insurance Committee, who referred the case to the London Committee. As her report did not mention that her son had gone to hospital, an officer of the Committee telephoned to the insurance practitioner on the 12th, the case being treated as one of an insured person requiring treatment urgently. The practitioner called at the house and found the patient had been removed. The patient died on the 17th. The Committee finds that the practitioner thought he could wash his hands of the case because his original advice (that the patient should go to hospital) had been ignored. The Committee observes that, whatever he might do with his private patients, he had a definite obligation to provide treatment for his panel patients. The offence of discontinuing treatment in the Committee's view becomes gross "negligence" (as defined in Article 41 (5) of the Medical Benefit Regulations) when the practitioner gives no warning that he has given up the patient and when he ignores an urgent request. The Committee has seriously considered a representation for removal of the practitioner from the panel but contents itself with the finding of gross negligence and a recommendation of severe censure and the withholding of £50.

The last instance of alleged inadequate treatment is trivial and was disposed of without a hearing. A patient consulted her panel doctor for digestion trouble; he found her suffering from a septic molar tooth, prescribed for her, and advised a visit next day when he diagnosed stomatitis and said she would require dental treatment. That afternoon she consulted a dentist who is said to have expressed surprise at the practitioner's "incomplete diagnosis." She then consulted another doctor who, she said, told her her temperature had risen to 102° and advised her to go to bed. She sought to recover expenditure amounting to 31*s.* incurred during her treatment by the second doctor. The panel practitioner said that a possible cause of the sudden rise of temperature was influenzal catarrh, then prevalent; if the patient had informed him of this development, he would have seen her; but she did not give him the opportunity. The Committee observes that the patient thought the examination incomplete because he had not used a thermometer—as though the thermometer was the only means of determining a raised temperature. It finds that there is no reason to think the practitioner did not exercise proper care; the cost of treatment by the second doctor is therefore not recoverable.

OTHER CASES.

One of the two remaining cases in this sample of a dozen can be quickly dismissed. The patient's employers made a complaint but did not pursue it. The other case arose out of a doubt whether it had been represented to the insurance practitioner that the patient was an insured person. He treated her for tonsillitis, charging a fee of 8*s.* 6*d.* (paid at the time of the consultation), which included 1*s.* for a private certificate. The Committee finds that on the first day of the treatment the doctor was not told that the patient was insured; he therefore did not violate the Terms of Service. Exercising its discretion under Clause 7 (3) of the Terms of Service, the Committee directs the refund of 7*s.* 6*d.* and the crediting of the

practitioner with the remuneration he would have received if he had attended the patient as a temporary resident. The sum of 7*s*. 6*d*. excludes the payment for the private certificate.

CONCLUSIONS.

These sample cases must represent a very small percentage of the total satisfactorily treated by insurance practitioners in the period and area concerned. We must not be content, however, to observe that it is a relief to find they are not more serious. The object of those who take part in the national health insurance system must be to avoid all possible cause of complaint. It will be useful to remember the Committee's views on particular points—e.g., that the duty to visit a patient is not excused merely because a visit is not expressly requested, that prescription without seeing the patient is strongly deprecated, and that the normal medical practice and the dictates of humanity may oblige a doctor to visit relatives for their comfort of mind though the patient is dead and though there is no statutory duty. But the most easily avoided matters of complaint are the direct breaches of a clear rule or regulation in such things as record-keeping and certification. The insurance practitioner must study the rules of the system which he undertakes to work; certificates are valueless if irregularly given; a member of an honourable profession will not put his name to statements which are not true. A casual and slovenly attitude towards certification, even though an element of fraud be absent, is dangerous for two reasons. It undermines the public faith in the medical profession which is entrusted with considerable responsibility in this respect by the State; it also exposes the individual practitioner to disciplinary action at the hands of the General Medical Council, of whose Warning Notice he cannot plead ignorance.

SPECIAL ARTICLES

REPORT OF THE BOARD OF CONTROL.

MENTAL HEALTH IN 1930.

THE passing of the Mental Treatment Act in July of last year and the steps taken to bring it into operation are naturally regarded by the Board of Control as the most important events of the year under review in their seventeenth annual report.[1] The report summarises the Act and remarks that some time must necessarily elapse before the effect of its far-reaching changes is felt, and calls for the coöperation of the public, the profession, and the local authorities to bring its benefits fully within the reach of those for whom they are intended. The Board's own steps to bring the Act into effective operation include a conference of representatives of local authorities last summer, a circular and memorandum to local authorities, and various explanatory circulars for local authorities and voluntary hospitals. The Board has given approval to licenced houses and nursing homes for a period of one year only, in order that special facilities for the intensive treatment of voluntary and temporary mental patients may be provided before the approval is renewed. The Board requires that every such house or home shall have a qualified mental nurse on its staff, and has also been concerned with the approval of special practitioners under the Act; up to March 31st last it had approved 2209 of these. The Board itself has been reconstituted, with five senior commissioners and 11 junior commissioners, on whom the task of visiting will principally devolve.

An inquiry into the working of the Act during the first two months of this year show, as would be expected, a very uneven provision in different areas. On the whole the figures are not unsatisfactory, but the Board considers the moment too early for either congratulation or disapprobation. The development of out-patient clinics is a most gratifying feature, perhaps because the difficulties of organisation are smaller than in other new ventures. The Board is particularly pleased that voluntary hospitals are showing willingness to appoint the superintendent of the local mental hospital a member of their staff, and hope that local authorities will reciprocate by appointing the honorary staff of the voluntary hospital consultants at the mental hospital. This interchange of staffs is an advantage, not only to the patients but also to medical education, clinical research, and the investigation of the problems of all departments. The Board is most anxious that teaching hospitals should admit voluntary cases in the earliest stages in order that students may learn to recognise incipient mental disease.

[1] London: H.M. Stationery Office. 1931. Pp. 109.

The Mental Hospitals during 1930.

The increase in the number of patients in public mental hospitals during the year was 2410, an increase that may be regarded as normal and that may be anticipated for some years to come. It does not, however, indicate any real increase in the incidence of mental disorders; it reflects the increase in the general population, a change in habits by which there is greater readiness to seek institutional treatment for old people who would formerly have been nursed at home, and the better feeding and more assiduous care which has diminished the death-rate in mental hospitals. The Board can find no justification for the suggestion that the conditions of modern life are conducing to mental breakdown.

Nevertheless, the increase is a matter of grave concern on account of the dangerously narrow margin of accommodation available. On Jan. 1st last there was, in the aggregate, overcrowding on the male side amounting to 452 beds and on the female side to 1635 beds. There were only 27 hospitals with 10 or more vacant beds on the male side and 19 with 10 or more vacant beds on the female side. Only two new mental hospitals are being built; one for Swansea and Merthyr and one for Middlesex at Porters Park, but Southend and East Ham are seeking a site for a joint hospital. The only hope of new beds in the immediate future is through the provision of admission hospitals and convalescent villas. The surplus accommodation rendered available by a re-allocation of poor-law institutions has proved to be much less than was anticipated. The Board stresses the lamentable effects of overcrowding, and points out how small an item in the budget of a local authority is the expenditure on public health services compared with that on highways and education. It hopes that, despite the difficult times, local authorities will realise the gravity of the situation and make plans for meeting it. It deplores the continued existence of mental hospitals without separate admission and convalescent units.

RESEARCH, SOCIAL SERVICE, AND NURSING.

The Board has given much consideration to the problem of research in mental hospitals and is most anxious that the work should be properly coördinated. An advisory committee is therefore being established; local authorities will be represented and expert assistance will be given by the Medical Research Council's Committee on Mental Disorders. Not less important, in the opinion of the Board, is a link between the work of mental hospital laboratories and that of universities and medical schools.

The Board regrets very much that in some areas the offer of voluntary organisations to assist with social service has been refused by the local authorities. The Board thinks it desirable that the voluntary spirit should be preserved and that this work should not be wholly professionalised, although in the larger area it is desirable to have a nucleus of trained and paid workers. Social work and after-care cannot, of course, be separated, and the real problem is the recruiting and training of the right type of worker.

The Board strongly approves the appointment of one local committee to deal with the mentally defective and with the mental hospitals. This will, however, greatly enlarge the work of the committee, and it is essential that some effective liaison be secured between this body and the Public Health Committee.

Many hospitals still find difficulty in securing probationer nurses, and the Board thinks that more might be done in the way of propaganda, through coöperation with the educational authority and perhaps also with the labour exchanges, to obtain selected candidates from distressed areas. The standard must not be lowered, for that will only increase the difficulty. The Board now has an inspector fully trained in both general and mental nursing, who is available for consultation on any deficiency in the arrangement of the hospitals which may deter nurses from joining or remaining in the service.

THE FIGURES FOR 1930.

On Jan. 1st, 1931, the number of notified insane persons under care in England and Wales was 144,161. The males were 44·1 per cent. and the females 55·9 per cent., a decrease of 0·1 in the proportion of males. Private patients numbered 14,404, rate-aided patients 128,846, and criminal patients 911. The recovery-rate for the year was 32·93 per cent., 29·87 per cent. for males and 35·38 for females. This is an increase of 0·87 for males and 0·72 for females above the rate for the previous decade. The death-rate of 6·71 per cent. is the lowest on record, being 1·33 below that for 1929. The rate was 7·43 per cent. in males and 6·13 per cent. for females. The alterations and extensions that received statutory approval during 1930 include admission hospitals at Denbigh, Banstead, and Hull; nurses' homes at Denbigh, Severalls, Chartham, Springfield, Netherne, East Sussex, the East Riding of Yorkshire, Bristol, and Leicester City; convalescent or other villas at Denbigh, Brookwood, Netherne, West Sussex, Winson Green, and Portsmouth; extensions of ward space at Long Grove, Salop, Netherne, Brighton, and Bristol; additions to other buildings at Cumberland and Westmorland, Brentwood, Netherne, Lancaster, and Cheddleton. The number of post-mortem examinations held in county and borough mental hospitals was 5404, being 68·8 per cent. of the deaths. The percentage varied from 90 or more at some hospitals to 17 and 15 at others. The total expenditure on county and borough mental hospitals, during the year ending March 31st, 1930, amounted to £8,148,752, of which £7,028,845 represented maintenance. This was an increase of over £90,000 in the cost of maintenance and over £80,000 in the cost of building and repairs, compared with the preceding financial year. At the beginning of 1930 there were 1209 patients under treatment for tuberculosis, a proportion of 10·3 per 1000 of the total number resident. The highest incidence is in Notts County, Middlesbrough, Cumberland, Derby County, Cotford, and Northumberland, obviously to some extent a geographical distribution. The death-rate from this disease has been reduced to 6·3 per 1000 patients resident. Suitable quarters for tuberculous patients are being provided in an increasing number of mental hospitals, but there are still some for whom appropriate accommodation is inadequate.

There were 106 cases of typhoid and paratyphoid fevers, a decrease of 14 on the previous year. Two epidemics were traced to a polluted water-supply. The number of cases of dysentery—254—was reduced by nearly a third from the previous year. A great deal of time and work has been devoted to the discovery of the source of intestinal infections, particularly carriers. One instructive case was found to carry not only typhoid but also dysentery and another diarrhœal disease. Attention has also been directed to new admissions who may introduce infection. An increasing number of hospitals practice protective inoculation. There was less influenza last year than the year before, and the fall in pulmonary tuberculosis was coincident.

Mental Deficiency.

The progress on the mental deficiency side has been more satisfactory than the figures might suggest, and the Board records with approval a marked awakening of local authorities to the wisdom and necessity of carrying out their duties in this branch. At the present time 53 county councils and 61 county boroughs are seriously and actively considering some scheme for residential provision, while only 10 appear to have taken little or no action. Three new institutions were opened during the year and 1255 additional beds provided. If schemes recently submitted materialise, some 10,000 extra beds will have been provided in about five years' time, and the Board estimates that at this rate it will be possible, with active, continuous, and prolonged effort, to meet the demand for the most urgent of the young trainable and employable cases in about 15 or 20 years. The committee, under the chairmanship of Mr. Walter Hedley, K.C., has now presented its report on economy in the provision and maintenance of homes for the defective. It did not succeed in cutting the requirements of the Board much finer. The Board realises that the cost of construction is of real importance in the development of colony policy, and is glad to note that there has been a steady fall; the cost may now be taken at about £300 a bed, this including all the administrative buildings of a complete colony.

The Board regrets that occupation and industrial centres are not being developed more rapidly to help parents who are both willing and able to keep their mentally defective children at home but cannot provide them with suitable occupation and training. It has been proved repeatedly that the initial difficulties in the establishment of day centres can be overcome and that these centres meet the needs of the situation in an inexpensive and efficient manner. The Board thinks that it is not yet generally recognised that all defectives—except the lowest grade idiots—benefit from training, and that without it even the best behaved are apt to degenerate.

Another important provision in which there has been no increase during the year is that of hostels for defective boys and girls whose training has fitted them for work outside an institution. The hostel forms an invaluable link between the institution and the community and saves the advancing defective many unnecessary disasters.

The increase in the number of defectives ascertained by local authorities has been maintained and the ratio per 1000 is now 2·17 as compared with 1·81 a year ago. The report, as usual, lists areas in which ascertainment seems to be inadequate and gives some illustrations of the terrible results of failure to ascertain. It reviews the methods of community care afforded by the Mental Deficiency Acts and the extent to which they are being carried out by local authorities. Once again the problem of marriage and sterilisation comes up for discussion, and once again the Board strongly recommends prohibition of marriage and feels that there is not as yet sufficient knowledge to justify even the most cautious legislation for sterilisation.

The Board urges again the separation of defectives from psychotics, but the shortage of provision for the former means that mental hospitals still have a large number of defectives in residence, an arrangement which is essentially bad for everybody concerned. On Jan. 1st, 1931, there were 55,064 mental defectives under care, 2120 of them under guardianship or notified.

The report concludes with a brief review of research work in mental hospitals; this will be dealt with more fully in the second part of the report, to be published later in the year.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 27TH, 1931.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 48; scarlet fever, 1427; diphtheria, 882; enteric fever, 31; pneumonia, 552; puerperal fever, 49; puerperal pyrexia, 99; cerebro-spinal fever, 40; acute poliomyelitis, 4; acute polio-encephalitis, 1; encephalitis lethargica, 10; continued fever, 1; dysentery, 21; ophthalmia neonatorum, 110. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on June 30th–July 1st was as follows: Small-pox, 124 under treatment, 1 under observation (last week 138 and 2 respectively); scarlet fever, 1112; diphtheria, 1421; enteric fever, 13; measles, 137; whooping-cough, 436; puerperal fever 36 (plus 8 babies); encephalitis lethargica, 206; poliomyelitis, 2; "other diseases," 152. At St. Margaret's Hospital there were 11 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 1 (1) from enteric fever, 27 (0) from measles, 3 (1) from scarlet fever, 21 (7) from whooping-cough, 18 (2) from diphtheria, 39 (13) from diarrhœa and enteritis under two years, and 24 (3) from influenza. The figures in parentheses are those for London itself.

Small-pox was mentioned as the cause of death for the month of May in a case assigned to Coalville U.D., Leicestershire. Three deaths from meningococcal meningitis were reported in London, 2 from 15–25 years, 1 from 25–35. Eight deaths from measles occurred in Sunderland, 4 in South Shields, 3 in Birmingham. Birmingham reported 3 deaths from whooping-cough.

The number of stillbirths notified during the week was 275 (corresponding to a rate of 40 per 1000 births), including 37 in London.

CENTENARY OF THE LEEDS SCHOOL OF MEDICINE.

THE centenary of the Leeds School of Medicine was impressively and pleasantly celebrated on July 1st. The growth of what is now the Medical Faculty of the University of Leeds from the Medical School founded in 1831 makes a stimulating story. The school was united with the Yorkshire College in 1884. By this act of union the Yorkshire College was enabled to apply for admission to the Federal Victoria University and became one of its constituent colleges in 1888. In 1904 the University of Leeds became an independent University on the disruption of the Victoria

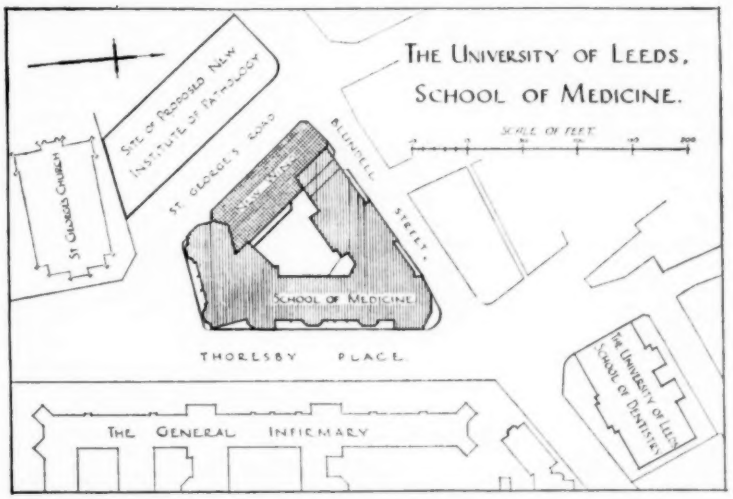
FIG. 1.

The home of the School of Medicine from 1834 to 1864.

University. From its earliest beginnings, when it found accommodation in a few back rooms in North-street, the progress of the medical school has been steady and encouraging. From 1834 to 1864 the work was carried on in a house in East Parade (Fig. 1) which is now converted into offices. In 1864 Sir James Paget opened the buildings in Park-street, where several men who are still in active work took part in the teaching. These buildings were planned by Mr. George Corson, under the guidance, so far as their requirements were concerned, of the members of the teaching staff. In those days, however, little more was deemed necessary than a dissecting room, a lecture theatre, and very limited laboratory accommodation. In 1894 a long cherished wish was realised, and the present building in Thoresby-place was opened by the King and Queen, at that time the Duke and Duchess of York. Excellent accommodation was secured for the anatomical department; what was deemed adequate for physiology and pathology was provided, and the facilities for the teaching of the other subjects were greatly increased. The buildings were erected according to plans drawn up by Mr. W. H. Thorpe. With this

great advance in the school there must always be associated the honoured name of Thomas Scattergood, who was for many years Dean of the school and of the medical department of the Yorkshire College. He it was who determined in his mind the site, who impressed the authorities with its manifest advantages, who succeeded in inducing the college to acquire the land, and who, ably seconded by Prof. Birch and in a lesser degree by others, watched every step in the preparation of the plans and in the actual carrying out of the work. Scattergood, by his great personality, developed in others something of his own enthusiasm. The building occupied three sides of a quadrangle, and though little has required to be altered in the structure, extensions to improve the accommodation for physiology and pathology have been found necessary. The first requirement has been met by the completion of the fourth side of the quadrangle, and this part of the building has been planned by Mr. J. C. Procter, advised by Prof. McSwiney (Fig. 2). The large new block which is being put up in the immediate vicinity of the main building will give ample accommodation for an Institute of Pathology. It is impossible to think of the Leeds School of Medicine apart from the School of Dentistry, or from the General Infirmary, and other charitable institutions of the city. The position of the school buildings in relation to some of the associated institutions is shown in Fig. 3.

FIG. 3.

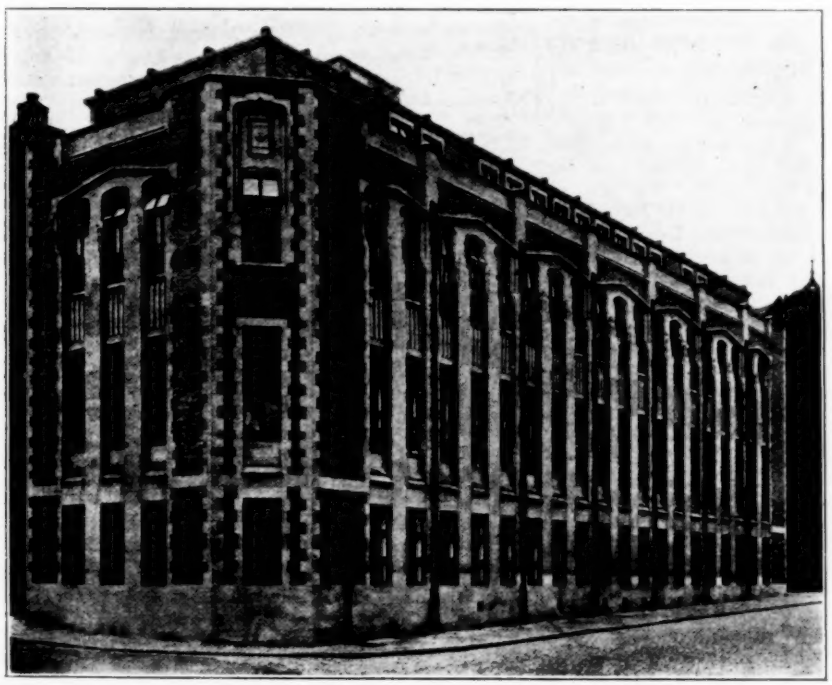


The plan of the medical buildings, giving the position of the new wing shown in Fig. 2 and of the site of the proposed new Institute of Pathology.

The main event in the celebrations was the congregation of the university over which the Chancellor, the Duke of Devonshire, presided. About 50 delegates from the other universities of the country and of other teaching bodies and institutions, were first received by the Chancellor, and addresses of welcome were then given by him and by the Vice-Chancellor, Sir James Baillie. Replies were made by Sir Humphry Rolleston and by Major-General Hime, R.A.M.C., a former pupil of the school. Honorary degrees were then conferred upon Dr. Hawkyard, who occupies the position of Lord Mayor, on Dr. Jane Walker, Dr. A. G. Barrs, Sir John Bland-Sutton, Lord Dawson of Penn, Sir Walter Morley Fletcher, Sir Gowland Hopkins, and Sir George Newman.

On the evening before the formal ceremony a dinner was given by the past students of the school, at which most of the delegates were present. The chairman was Lord Moynihan, who proposed the toast of the guests in felicitous terms; Prof. Arthur Hall, of Sheffield, replied. Most of those present went on to a reception which was given by the Lord

FIG. 2.



The new wing, opened in 1930, of the present School which dates from 1894.

Mayor at the Art Gallery. On the same day as the congregation was held, the Leeds and West Riding Medico-Chirurgical Society, of which this year the Lord Mayor happens to be the president, gave a luncheon to the delegates. Speeches were made by the President, by the Duke of Devonshire, by Prof. Dobson, and by Sir George Newman. On the same afternoon receptions were held at the School of Medicine and at the General Infirmary, and a long, interesting, if somewhat full, day was brought to a close by the university dinner, presided over by Colonel Tetley, the pro-Chancellor, followed by a ball.

The celebrations have done much to emphasise the unity of the university, of which indeed the school is the oldest part. Its old names need not even now be laid aside, and as the Medical School of the University of Leeds its continued development and prosperity is assured.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

VISIT OF DR. ARIËNS KAPPERS.

Dr. C. U. Ariëns Kappers, Director of the Central Institute of Brain Research at Amsterdam, visited Dublin last week to receive the Degree of Doctor in Science *honoris causa* from the University of Dublin. During his visit he gave three lectures, which were open to all medical men and students of medicine or science. On July 2nd he lectured to the Royal Academy of Medicine in Ireland on the Structure of the Brain in Prehistoric and Historic Races. On the 4th he lectured to a meeting of the British Neurological Surgeons on the Phylogeny of the Glial and Meningeal Tissues and the Cerebro-Spinal Fluid Cavities, and to the Royal Medico-Psychological Association on the Function of the Layers of the Cerebral Cortex. Despite the abstruse nature of his topics, Dr. Kappers's gifts as a lecturer and his admirable command of the English tongue rendered his discourses intensely interesting to his audiences.

HONORARY DEGREES AT DUBLIN UNIVERSITY.

In addition to that conferred on Dr. Kappers, two other honorary degrees of interest to the medical profession were conferred last week at the Summer Commencements of Dublin University. The degree of Doctor in Medicine was conferred on Sir John Rose Bradford, F.R.S., late President of the Royal College of Physicians of London. In presenting Sir John, the Public Orator, Sir Robert Tate, Fellow of Trinity College, Dublin, drew attention to his pioneer work on the physiology of renal secretion, and his applications of his findings to clinical medicine. A similar degree was conferred on Major-General Sir Foster Reuss Newland, who was himself educated at Dublin University. The Public Orator drew attention to Sir Foster's distinguished services in the Great War.

DISCUSSION OF A DUBLIN HOSPITAL IN THE SENATE.

Last week Senator Sir John Keane moved in the Senate of the Irish Free State that the Dublin Skin and Cancer Hospital should be included in the Sweepstake Scheme. The proposal led to a warm debate, in which the proposal was opposed by two medical men who are senators, Mr. O. St. Gogarty and Sir Edward Coey Bigger. The Minister for Justice gave his opinion, as reported in the daily press, that he was satisfied that the Cancer Hospital was not a voluntary institution. The accounts showed that the patients paid considerably more than the whole expenditure of the hospital. He was convinced that the Hospitals' Committee was right in refusing the application to include that hospital in the sweep. Sir John Keane withdrew his proposal.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

Surg. Vice Admiral Sir Arthur Gaskell, K.H.S., has been placed on the Retd. List.

Surg. Rear Admiral R. St. G. S. Bond to be Surg. Vice Admiral.

Surg. Capt. H. R. H. Denny to be Surg. Rear Admiral.

Surg. Comdrs. Cyril V. Griffiths and Frank L. Smith to be Surg. Capts.

Surg. Lt. J. G. Maguire to be Surg. Lt.-Comdr.

ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Lt.-Comdr. R. Hall to be Surg. Comdr.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. C. H. Turner, having attained the age for compulsory retirement, is placed on retd. pay.

Lt.-Col. C. R. M. Morris retires on retd. pay on account of ill-health.

Majs. T. J. Mitchell and R. C. Priest to be Bt. Lt.-Cols.

Maj. (temp. Lt.-Col.) W. B. Purdon to be Lt.-Col.

Maj. F. Casement to be temp. Lt.-Col.

Lt. T. E. Moles to be Capt.

Lt. J. C. Gilroy to be Capt., and remains secd.

D. K. Weston is granted a temp. commn. in the rank of Lt.

TERRITORIAL ARMY.

Lts. R. S. Taylor and C. M. Willcox to be Capts.

J. G. McCrie (late Cadet Serjt., G. Watson's Coll. Contgt., Jun. Div., O.T.C.) to be Lt.

R. H. Ballard to be Lt.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Capt. T. H. Sansome, from Active List, to be Capt.

INDIAN MEDICAL SERVICE.

Lt.-Col. H. H. Thorburn to be Bt. Col.

Capt. J. R. Katariya to be Maj.

Lt. J. P. J. Little to be Capt.

Lt. (T.C.) N. L. Sah to be Capt. (T.C.).

ROYAL AIR FORCE.

Air Comdr. J. McIntyre to be Air Vice-Marshall.

Squad. Leader J. Rothwell and E. W. Craig to be Wing Comdrs.

COLONIAL MEDICAL SERVICE.

Dr. D. O. Peters has been appointed Medical Officer, Nigeria; Dr. E. J. Blackaby, District Medical Officer, Cyprus, has been promoted Medical Officer in the East African Medical Service, Nyassaland, and Dr. F. Keyt, Provincial Surgeon, Western Province of Ceylon, has been promoted to Medical Superintendent there; while Miss M. M. McDowall, Lady Medical Officer, Sierra Leone, has been made Lady Medical Officer, Gold Coast. Dr. L. A. Prins, Assistant Director of Medical Services in Ceylon, has been promoted to Deputy Director of Medical and Sanitary Services.

COMMISSIONS IN ROYAL ARMY MEDICAL CORPS.

Twenty-five permanent commissions in the Royal Army Medical Corps are offered to registered medical practitioners, under 28 years of age. There will be no entrance examination, but candidates will be required to present themselves in London for interview and medical examination. At the same time, a certain number of temporary commissions under similar conditions as regards age and qualifications will also be offered. Applications should reach the War Office not later than July 20th. All information as to conditions of service and emoluments may be obtained from the Under-Secretary of State, The War Office (A.M.D.1), Whitehall, London, S.W.1.

BRISTOL GENERAL HOSPITAL: ANNUAL REPORT.—In 1930 the new in-patients numbered 4387, a fractional reduction upon the preceding year; the out-patients were 30,751, also a small diminution. The average stay was 19·33 days, and the total cost per head £8 13*s.* 4*d.* The net deficiency on the year was £9629, and the bank overdraft was £21,159. The committee express their "profound concern" at the large number of patients awaiting admission.

CORRESPONDENCE

SUCCESSFUL MEDICAL SOCIETIES.

"A."—FOUR DISTINCT GROUPS.

To the Editor of THE LANCET.

SIR,—At no time in the history of medical science in this country have medical societies been more successful or more prosperous than at present. The reason is not far to seek if one considers what are the prime motives of these societies. They can be divided into four big groups.

(1) The *Specialist Society*.—In this category come the sections of the Royal Society of Medicine, the Association of Physicians, the Biochemical Society, and kindred organisations. Their object is to discuss theories and present new facts to those who are most able to criticise. The very spirit of criticism and scientific enterprise which is the essential atmosphere of such a body is necessary for keeping alive the fire of enthusiasm which all research workers need. These bodies often publish proceedings which form a useful platform from which to address a wider specialist audience, and act as a record of work done in special branches. Such groups must avoid the tendency to become too narrow or to be monopolised by a few individuals. When very specialised they act as an international medium, and their smaller use in a little sphere is compensated by their wider use in a larger one.

(2) The *General Medical Society*.—Here, particularly in the smaller towns, the membership consists largely of general practitioners, with two or three men representing respectively the various specialties. Here, too, a lecturer may be asked to read a paper on a given subject which is afterwards discussed by the general body. Clearly in this group the objects aimed at will be different from the first. The knowledge propounded will usually be far more proved, for the audience will be less able to criticise the more debatable aspects. If a paper is read by a specialist there will be a general unwillingness to cross swords with him. The society serves rather as a forum before which the general practitioner can receive a résumé of recent work, and as a stimulus to his own reading. This group brings men and women together socially, gives opportunities for good fellowship, and provides an efficient medium for concerted action in measures affecting the local corps medical. It also can act as a disciplinary body.

(3) The *Mixed Society* consists of doctors and laymen who have some common point of interest. An excellent example is the Medico-Legal Society, of which the members are either medical men, barristers, solicitors, chemists or others interested in forensic medicine. The chairman is alternately a doctor and a lawyer. Discussions here are very different from those heard at pure medical meetings. The criticising ear of another profession, and the need for an exact explanation of technical terms, induces a real clearness in the speaker's mind, while the medical focus is widened. Valuable friendships are formed in such a society, and it is not too much to say that the public health and criminal laws are greatly influenced by discussions at bodies of this kind where law-makers and experts meet in a spirit of camaraderie. Such a body has important repercussions in bringing out the medical snags of existing legislation, such as that on poisonous drugs, the punishment of juvenile delinquents, or the place of psychology in the criminal code.

(4) The *Hospital Society*.—In a fourth group are societies that have gathered round a hospital or centre—e.g., the West London Medico-Chirurgical Society, which was an offshoot of the West London Hospital, the Chelsea Clinical Society, and others. Attendance at meetings of these societies is small for many reasons. The practitioner finds the time of meeting clashes with his evening surgery, and naturally does not always wish to go to a medical meeting on his free evening. The consultant has his own society in town. Various expedients have been tried, of which the two most successful are dinner meetings and cinema films. A dinner meeting, if there is a good opener, will often attract 40 or 50 members. In organising a discussion good stage management is needed. On a subject such as cholecystitis a physician may open who will be followed by a surgeon and pathologist, so that a complete picture of the disease is placed before the audience in its newest relationships.

As Dr. Raymond Crawfurd says, one of the important functions of a medical society is to provide a medium for the conveyance of fresh knowledge from the centre to the periphery. Apart from actual meetings, societies can do this in two ways: first, by a library service; and secondly, by publishing transactions. A magnificently organised library such as that of the Royal Society of Medicine does invaluable service. The ordinary worker has not the time to look up the many references needed for writing a scientific article, nor is he able to buy the books or periodicals required to keep abreast of modern knowledge in a specialty. This service can only be done by a well-supported medical society.

In clinical medicine the medical society is a stage for securing advice in a difficult case or enlarging clinical experience by seeing cases well worked out by others. The duty of presenting a case imposes on the practitioner a stimulating piece of work. Osler often used to tell his students that there was nothing that clarified one's knowledge so much as the writing of a short article. The general practitioner has a rich harvest of clinical material, and medical societies offer a ready medium for the projection of this knowledge. One of the most promising roads of advance in medicine lies along the way of clinical work carefully observed, annotated, and accurately presented. In furthering this work medical societies can do yeoman service.

I am, Sir, yours faithfully,

June 20th, 1931. A RESEARCH FELLOW.

"B."—THE PART PLAYED BY TRADITION.

To the Editor of THE LANCET.

SIR,—The ideal medical society is a subject which appeals very much to me; I am quite sure that tradition plays an enormous part, while Dr. Crawfurd is right when he says it must be run by men who are still young. The best medical societies I know are those of Guy's and Edinburgh. The London Hospital Medical Society, though younger, follows pretty closely in order of excellence. Now the reason for this excellence, I am certain, is the traditional interest taken by students in the society, at meetings of which there is much more active discussion from students, house officers, registrars, and members of the staff than is usually heard. The meetings which are successful at the Royal Society of Medicine are those where the work of some great contributor to medical knowledge is discussed, preferably by himself.

For example, the world-wide interest in B C G will attract people, and rightly so, to hear Calmette. So that the first essential in the ideal medical society is never to let Tom, Dick, or Harry invite himself to give a paper, but to choose somebody who is actively engaged on a subject which is bound to interest a large audience.

Societies, however, are apt to make the mistake of inviting a foreigner to give an address without having made sure as to the quality of his English. This can sometimes be remedied by the right sort of interpreter. At the thirteenth International Physiological Congress, which can be taken as a medical society for the purposes of this discussion, Pavlov addressed a packed meeting in Russian. At the opposite end of the platform was his distinguished pupil Anrep, who took up sentence by sentence and translated it. Nevertheless, the interest was in what Pavlov himself said. In our ideal medical society we would choose the enthusiastic English student of the great foreign master to interpret for him in this way. After all, the people came to hear Pavlov, and were delighted to *see* him speak, since hearing conveyed nothing.

Another point of the greatest importance is to explain to a man, even though he be a lecturer in a medical school, that his words will go for nothing unless he speaks up. It amazes me how many men cannot make themselves heard in the back row. My short experience tells me that every lecturer should expend time and trouble in making sure that his illustrations are bold and visible, so to speak, beyond the back row. A man will have the impudence to place on the epidiascope screen a closely typed foolscap page; the result is that he himself on the platform is the only man who can read it. What should be done is that his information should be condensed and every letter marked out boldly with India ink upon engineers' linen. It should be arranged in a square to fit in to a lantern slide. All charts, tables, and historical discussions should be put out in the same way.

In regard to clinical evenings, the greatest source of ill-success is to have too many cases. What one requires is to have a small number of cases so well selected that the discussion can hold an audience whose interests are wide apart. Furthermore, after the patient is wheeled out the demonstrator should address the audience in a bold voice, using illustrations and photographs prepared in accordance with the foregoing rules.

I am, Sir, yours faithfully,

June 22nd, 1931. MEDICAL CONSULTANT.

"C."—COLLECTIVE EXPRESSION OF LOCAL PRACTITIONERS.

To the Editor of THE LANCET.

SIR,—Local medical societies, that is to say, societies whose primary function is the consolidation of local unity and fellowship, are not so common as they might be. The completion, therefore, of the first year of its existence by the Paddington Medical Society is deserving of mention. Its achievements may prove a useful example to those seeking the formation of similar societies elsewhere.

In addition to clinical objects this society defines amongst its aims the promotion of the efficiency and independence of practitioners, and its record during the past year goes some way to justify the pretension. Its syllabus has included an extensive range of material in the fields of public health, medical jurisprudence, hospital and consultant liaison, the administration and extension of public services and their encroachments on private practice, the present and future administration of the National Insurance Acts, and the function of medical journalism. This may seem a somewhat wide horizon for a local society. But the aim, apparently successful, has been to effect a combination of subject and speaker so as to ensure useful as well as interesting references to the problems of actual practice.

Two features of this society's work deserve special mention. These are the production of a report on national health insurance practice, and a scheme for the reduction of infant mortality in Paddington. The report is the work of members who are themselves insurance practitioners, and it reviews, critically and constructively, the principles and the administration of the Acts since their inception.[1] The inauguration of a scheme for general practitioner treatment of infants in Paddington whose parents are unable to afford the paid services of a doctor has been brought about by voluntary liaison between medical and other officers of public services, private practitioners, and interested lay sympathisers in Paddington. Its importance lies partly in the absence of official municipal or State control, and of any element of compulsion. Its financial administration has been linked up with that of the London Public Medical Service, and its operation is open to any practitioner in Paddington.

The Paddington society deserves congratulation on the completion of work which has been not only attractive and interesting to its own members, but, though modestly conceived in the first place for the purposes of local discussion, has attracted attention outside the borough.

I am, Sir, yours faithfully,

June 20th, 1931. A GENERAL PRACTITIONER.

TREATMENT OF CEREBRO-SPINAL FEVER.

To the Editor of THE LANCET.

SIR,—In your issue of June 20th (p. 1373) L. H. Copping asks for other observations on the treatment he describes. During the war I had charge of the military cerebro-spinal fever cases in the Isle of Wight, and generally injected the cerebro-spinal fluid intramuscularly, in addition to intrathecal injections of antimeningococcal serum. It was, I think, a valuable aid to recovery. In several pleuritic effusions I had injected the fluid in the same way, and this gave me the idea.

I have also used a somewhat similar treatment in a severe case of pemphigus.

The patient, a boy 2 years old, had bullæ profusely scattered over the body and limbs and seemed very ill. The mother stated that at the age of 4 months he had had a very similar attack and nearly died, and that he had had some milder recurrences at intervals since. Fluid was drawn from the blebs, and about 2 c.cm. was injected intramuscularly. The condition rapidly cleared up and the boy was free from symptoms until two years later, when he had another attack and the treatment was repeated. This was done four times in all, at varying intervals of a year or two, the symptoms being rather less severe each time. He is now ten years old, and has been practically free for two years. There was no syphilitic history.

The mother is convinced of the value of the injections. The blebs dried up rapidly after injection and fresh crops ceased to appear.

I am, Sir, yours faithfully,

L. P. GIBSON, M.R.C.S., L.R.C.P.

Cowes, Isle of Wight, July 4th, 1931.

[1] See THE LANCET, Jan. 17th, pp. 140, 166.

ACUTE RHEUMATISM FOLLOWING TONSILLITIS.

To the Editor of THE LANCET.

SIR,—There are several points in Dr. E. C. Warner's letter which require comment. When at the first annual meeting of the British Pædiatric Association, held at Windermere in May, 1928, I first discussed in a paper the "silent period" between nasopharyngeal infection and subsequent rheumatic relapses,[1] the theory received some criticism. Dr. Campbell and Dr. Warner's valuable studies published in your columns in 1930, and Dr. Sheldon's recent article, gave me, therefore, some satisfaction in confirming my original thesis. I cannot agree, however, with Dr. Warner that these acute relapses of rheumatism "can occur after any illness liable to produce a state of lowered resistance in the child." Surely there must be a more definite explanation than this, especially as a similar "silent period" is the rule when rheumatism follows the exanthemata that Dr. Warner has quoted. It is significant that, with the exception of chicken-pox, all the acute infectious fevers mentioned by him as giving rise to rheumatic complications are closely associated with streptococci in the throat. This, to my mind, is the important common factor between them and acute tonsillitis in the ætiology of subsequent rheumatism. Dr. Poynton and I tried to express this in our recent book on rheumatism when we said (p. 105) that "the first symptoms in a certain proportion (of rheumatic children) will be found to date back to a definite illness. Scarlet fever is the best known example, but the commencement of rheumatism has also been traced to other infections in which the streptococcus is much in evidence, such as measles, influenza and diphtheria . . ."

Dr. Warner appears to have misread Dr. Sheldon's argument about the non-infectiousness of rheumatism. I understood him to imply that rheumatism per se is not *infectious* to other patients, although the preceding throat infection might be. Much has been written about contagion in rheumatism, and Dr. Poynton and I took some pains in our book to refute this supposition. Nobody with any knowledge of rheumatism in children could dismiss peremptorily an *infective* element from the disease, although the exact bacterial pathogenesis is perhaps still not entirely clear. Here I am in agreement with Dr. Warner, but would hesitate to accept his simile between the valvular vegetations in rheumatism and subacute bacterial endocarditis as in any way proof of his contention. At this juncture, however, I do not wish to draw that red herring into your columns.—I am, Sir, yours faithfully,

BERNARD SCHLESINGER.

Portland-place, W., July 4th, 1931.

To the Editor of THE LANCET.

SIR,—Dr. Warner regards one of my remarks as "an unwarranted conclusion." This is because he has misunderstood my use of the word *infectious*, and I should therefore be glad if you would allow me to correct the wrong impression which my sentence has created.

Various authors have pointed out that acute rheumatism may occur in epidemics. In my paper evidence was advanced to show that acute rheumatic relapses were often preceded at a definite interval by sore throats, and one of the points I wished to bring forward was that the spread of rheumatism from case to case was carried out through the medium of the preliminary sore throat. In order to illustrate this point I compared the rheumatic reaction with post-diphtheritic paralysis. Everyone knows that epidemics of diphtheritic sore throat may occur, but surely no one imagines that post-diphtheritic paralysis can be conveyed from case to case. Using *infectious* in the sense of *communicability of disease*, I wrote "the rheumatic reaction whether arthritic or cardiac, has no more claim to be considered infectious than has, for example, post-diphtheritic paralysis." I was not concerned with the question of whether the rheumatic reaction was *infective*, using infective in the sense of "invasion of the tissues by pathogenic organisms." To have said that the rheumatic reaction was not the outcome of an infection by organisms would indeed have been an unwarranted conclusion.

I am, Sir, yours faithfully,

London, W., July 7th, 1931. WILFRID SHELDON.

[1] Arch. Dis. Child., 1928, iii., 176.

STATE CONTROL OF THERAPEUTIC SUBSTANCES.

To the Editor of THE LANCET.

SIR,—In your report (June 27th, p. 1401) of my remarks on Dr. Hartley's paper unfortunately one word has dropped out. The final sentence should read, "It was hoped to make a Schick toxin which would stand *hot-room* temperature for several days." The point is a not unimportant one. The original Schick toxin used some years ago with a phenol diluent was very unstable. By the use of boric-borate-buffer (Glenny and Pope) there has been available for several years, and in clinical use, toxin diluted with buffer solution which is stable for many weeks. Recently Bunney (U.S.A.) used 2 per cent. peptone solution as a diluent. We find some difficulties with this particular dilution, and A. T. Glenny has made a variant. He finds that 1–1000 peptone dilution with buffer solution provides Schick toxin which is stable in the hot room for at least a week, and at ordinary room temperature for months. This has been tried clinically and appears to be satisfactory.

I am, Sir, yours faithfully,

R. A. O'BRIEN.

The Wellcome Physiological Research Laboratories, Beckenham, Kent, July 1st, 1931.

MORTALITY AFTER PROSTATE OPERATIONS.

To the Editor of THE LANCET.

SIR,—I was gratified to see that my small article in your issue of June 13th brought letters from both Mr. Everidge and Mr. Page. At the same time I feel one or two points require further attention.

In the first place, may I say that the object of the article was to bring to notice the importance of the matter, and it was only a preliminary report of research work which I have still under investigation. In the second place, I am well aware that the blood-urea is altered by many conditions other than the effect of ether. It is so affected by gas and oxygen anæsthesia. I simply tried to suggest that this was not to the same extent as when ether was employed, and I think that this is borne out by the Table I gave of a series of cases of general surgery. I could have provided evidence to show that with spinal anæsthesia there was not the same post-operative rise. As to the mortality-rate after prostate operations in "a hospital," the figure was taken from the only

material I had available at the time, and was simply used as an illustration to substantiate my view as to this being too high. I have since learned that the average mortality-rate in that hospital over a number of years is considerably less.

Finally, I would like to add that the experience of Mr. Page—whose skill in spinal anæsthesia I witnessed 14 years ago—rather supports the view suggested in my article.—I am, Sir, yours faithfully,

Liverpool, July 6th, 1931. R. J. MINNITT.

AUDIOMETRY AND AUDIOGRAPHY.

To the Editor of THE LANCET.

SIR,—In the report of the discussion on audiometry and audiography in the Otological Section of the Royal Society of Medicine in your issue of July 4th, p. 20, I am credited with referring to a paper I read some years ago (at the International Otological Congress at Boston, U.S.A., in August, 1912) showing a method of audiometry by tuning-forks, correcting the time error by a logarithmic scale, and reducing it to true loss of hearing power. That, however, accounted only for duration, not for the dying away of the vibrations. This latter sentence should apply only to the method of audiometry devised by Hartmann, which recorded simply the percentage loss of duration of hearing for the tuning-forks. The application of the logarithmic scale *did* take into account the dying-away of the vibrations and reduced the percentage loss of duration of hearing to the percentage loss of hearing power.

The methods of testing and of logarithmic correction will be found in detail in the *Journal of Laryngology* (June, 1929). I have a few reprints at the disposal of any who are interested in the subject.

I am, Sir, yours faithfully,

London, July 7th, 1931. JAMES DUNDAS-GRANT.

TUBERCLE BACILLI IN CREAM.

To the Editor of THE LANCET.

SIR,—Much attention has been focused on the need of a pure-milk supply in England—particularly in relation to tuberculosis. Little mention has been made of the possibility of cream and butter containing tubercle bacilli. Can you enlighten me on the subject? In India, in military dairies, it is customary for milk to be pasteurised before being made into cream and butter, in order to prevent the possibility of the spread of typhoid by these foodstuffs.

I am, Sir, yours faithfully,

G. FAWSITT TAYLOR,
Captain, Indian Medical Service.

King's College Hospital, July 4th, 1931.

PUBLIC HEALTH SERVICES

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are 1930 statistics of five county boroughs:—

Name of district and estimated (R.-G.) mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Infant and neonatal mortality.	Young child (1–5 yr.) mortality.	Maternal mortality in childbirth.
Coventry (173,240)*	13·9	9·6	0·94	1·16	1·4	1·8	57	30	21	7·0
Reading (97,050)†	14·4	11·4	1·06	1·53	1·7	1·5	55	39	9	2·1
Bootle (84,970)*	21·1	11·1	1·27	1·00	1·9	1·4	79	26	36	3·3
West Bromwich (80,840)†	20·7	11·4	0·84	1·30	2·2	1·9	66	35	35	2·4
Eastbourne (59,000)‡	11·3	11·3	0·63	1·76	1·0	2·4	40	24	10	6·0

Registered stillbirths per 100 live births:—Coventry 4·9, Reading 3·3, Bootle 4·7, West Bromwich 4·0.

* Local estimate. † R.-G. estimate for 1929. ‡ R.-G. estimate for 1929 was 58,570.

Coventry.

DR. A. MASSEY refers to 1930 as an historic year, as during it the Local Government Act, 1929, began to operate from April 1st and the Housing Act, 1930, was born, whilst the Mental Treatment Act was passed and came into operation on Jan. 1st, 1931. The chief change under the first Act was that the former poor-law hospital became the Gulson-road Municipal Hospital. It contains 301 beds and the new nurses' home begun by the guardians was officially opened on April 1st, 1931. At present it contains a more or less stationary population of 100 chronic cases, who are suited to a simple institution rather than to a well-equipped hospital, and the need for the early removal of these cases is evident. The housing position in Coventry is peculiarly difficult owing to the rapid increase in population pari passu with the virile growth of local industry. The five year programme includes a clearance of five small areas (150 houses with 750 inhabitants), the demolition of 75 unfit houses occupied by 375 persons, and the renovation of 600 unfit houses. It is also expected that during this period most of the 649 munition hutments owned by the council and 377 privately owned hostels of a similar type will be demolished. During the year the Coventry House Improvement Society has been formed and its first operation has been to acquire and recondition 14 houses at a cost of £900.

The Mental Treatment Act virtually establishes a preventive side to psychological medicine by providing for "voluntary" and "temporary" patients. A mental out-patient clinic is already in existence, conducted by the medical superintendent of Hatton Mental Hospital. In the matter of provision for mental deficiency accommodation has been found in outside institutions for high-grade defectives. The guardians had acquired the Exhall estate, which now comprises 144½ acres, and a scheme is on foot to make initial accommodation for 40 male low-grade defectives and to increase the accommodation gradually to 400 beds. During the year complete coördination was effected between voluntary and municipal child welfare centres. The public health committee now supplies the medical and nursing services at the voluntary centres. Plans have been prepared for a new isolation hospital of 152 beds with a view to extension ultimately to 236 beds. All the preliminary details of the public abattoir scheme have been completed and a loan sanctioned for £83,210. Building will begin during the current year.

In June a representative committee was appointed by the Warwickshire and Coventry tuberculosis committees to consider and report on the desirability of forming a joint tuberculosis colony similar to Papworth. The committee was still at work at the year end. Diphtheria was the only infectious disease which occasioned serious concern during the year.

There were 484 cases notified and 40 deaths—a case-fatality of 8·3 per cent. During the year 734 school-children were immunised.

Reading.

Dr. H. J. Milligan reports that the primary step under the Local Government Act was the constitution of the hospital portion of Battle Infirmary (formerly poor-law) as Battle Hospital and the delegation of its management to the health committee. Under a progressive board of guardians this hospital during the last ten years has been brought thoroughly up to date. The beds number 279, and the hospital is well-equipped for general medicine, surgery, midwifery, and diseases of women. Under the new Act the relieving officer no longer acts as a necessary medium between the sick person and a bed in the hospital, but the medical superintendent is in direct touch with outside practitioners for the admission of their patients. The mental deficiency committee has in hand a comprehensive scheme to provide for the accommodation of mental defectives.

An extensive site has been procured for the housing programme of the next five years. There are about 600 houses which fall below a reasonable standard of fitness and of these 238 have been scheduled for demolition. It is also proposed to deal with a series of clearance areas and to erect 2000 additional houses on the Whitley estate. By-laws are needed for houses let in lodgings, chiefly houses originally used by single families and now let to several tenants. As examples of the exorbitant rents obtained, Dr. Milligan mentions a large house holding 11 separate families who pay a total weekly rent of £7 8*s*. 6*d*.

A small explosive outbreak of glandular fever affecting nine persons occurred in one of the university hostels in May. The principal features were fever for from two to eight weeks, a rash similar to typhoid, and enlargement of the glands of the neck and scalp. All the patients recovered without ill-effect. One case of undulant fever occurred; the patient made a good recovery. Dr. Milligan mentions that the neo-natal mortality-rate was much higher than the average of recent years, but he has no satisfactory explanation to suggest. During the year, 34 milk samples were examined for tubercle and four gave a positive result. During the past 11 years out of 282 milk samples examined 31, or more than 10 per cent., have contained tubercle bacilli. For the disposal of refuse "controlled tipping" has been adopted. The process has been closely followed during the year and no complaints of flies, rats, or offensive smells have been received.

Bootle.

As the institutions of the West Derby Union which deal with the sick and able-bodied poor are outside the borough, an agreement has been made with the Liverpool City Council that for a period of ten years Bootle shall be at liberty to send these patients to the Liverpool Public Assistance Committee's institutions. It is hoped to provide for the maternity cases at present confined in Liverpool Public Assistance institutions in an enlarged Bootle maternity home. Domiciliary (poor-law) medical attendance is now controlled by the Public Assistance Committee acting through Dr. F. T. H. Wood, the medical officer of health, and the two district medical officers are empowered to use the services of the nurses of the Bootle Association for patients treated at their own homes.

Since 1920, 1665 municipal houses have been built; the renovation of 1200 houses during the next five years is contemplated. A beginning has been made with the postnatal supervision of mothers; 747 new cases attended the antenatal clinics and 65 of these returned to the clinic for re-examination six weeks after confinement. A new health centre is to be built in the north of the town, and the isolation hospital is to be extended by the erection of a new 45-bed pavilion which will make possible the admission of cases of measles and whooping-cough now sent to Liverpool Public Assistance institutions.

West Bromwich.

The Hallam Hospital, which has been transferred from the guardians, is well situated in extensive grounds in a central but open part of the town. It is managed by the Health Committee, and has 474 beds and a visiting staff of eight physicians and surgeons. The senior visiting physician, Prof. Douglas Stanley, acts as medical superintendent, and Dr. W. Stott, the medical officer of health, as chief administrative officer. Prof. Stanley states that 4183 patients were admitted during the year; his report shows that the antenatal department has done excellent work; the hospital provides 26 maternity beds. Probationer nurses are sent to the fever wards in the isolation hospital for three months' duty. Dr. Stott points out that the accommodation at Hallam Hospital is 50 per cent. too great for the needs of West Bromwich and that it would be a serious matter if the outside authorities terminated their agreements with West Bromwich by which they share the use of this hospital. It would be a waste of the Hallam Hospital accommodation and of public money if other hospitals were built in the neighbourhood. An orthopædic centre is urgently needed, and it is hoped that this need will be met during the current year. A postnatal clinic under the visiting gynæcologist, Mr. J. S. M. Connell, is in existence at the Hallam Hospital at which it is proposed to give advice in selected cases on the question of birth control. Dr. Stott reports that breast-feeding is frequently discontinued without adequate reason, and it is estimated that only a little more than one-half of the babies are breast-fed. The records show that 46 babies were taken off the breast without medical advice before they were 14 days old, yet only five notices of "change to artificial feeding" were received from midwives.

Unfit houses in the borough are estimated to number 1300. During the last ten years 2278 municipal houses have been erected and there is a proposal to build a further 2000 during the next five years. It is difficult to find suitable sites within reasonable distance of the centre and of the works, owing to mining operations. In 1920, 35 areas, comprising 2871 houses, were represented as unhealthy, and since that date only one area has been cleared, although demolition is progressing in three others.

Eastbourne.

Dr. W. G. Willoughby reports that the altered arrangements under the Local Government Act were soon working smoothly. St. Mary's Hospital, transferred from the poor-law, is under the care of the Public Assistance Committee. One of the blocks, containing 22 beds, is used for infirm cases, and if these could be transferred to a simpler institution Dr. Willoughby considers the hospital accommodation in the borough would be adequate. At present there is a shortage of beds for children.

As regards the five years' housing programme, no area requires special consideration, but Dr. Willoughby thinks that 236 houses should be provided under the 1924 Act and 14 under the 1930 Act, and that 100 houses of the smaller type should be erected. He points out that there is a waste of municipal houses owing to change of the original needs of the tenants. It thus comes about that the committee goes on building while the older municipal houses are occupied by persons who have no special need of them.

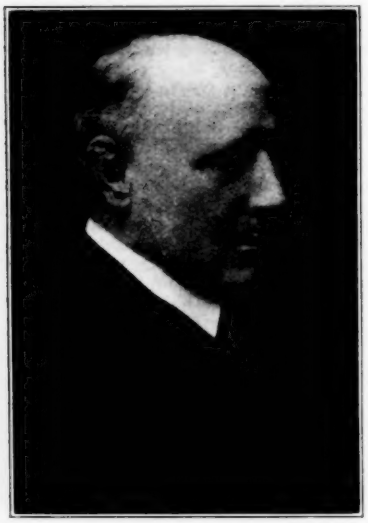
More than a third of the births took place in the maternity home during 1930, and, including the extern cases, half the births in the borough were managed from the home. In all these cases antenatal work was carried out. Three local cases of undulant fever were reported in November and December, and a fourth had previously been removed to hospital from the rural district. The milk-supply was different for each patient and no goat infection or connexion between the four cases could be traced.

OBITUARY

EDWARD BEADON TURNER, F.R.C.S.

WE announced last week the death of the well-known doctor and athlete, Mr. E. B. Turner, which occurred at his London residence on Tuesday, June 30th, in his 77th year. He had known during the last year the incurable nature of his infliction but bore the pain with uncomplaining courage, and his death may have come as a surprise to many friends.

Born in 1854, Edward Beadon Turner was the elder son of the late Mr. George Turner, of Sherborne and Sussex Gardens, London. He went to Uppingham when, under Edward Thring's inspiration, the school was taking a high place among the English public schools. He has himself recorded in one of his many happy after dinner speeches, that he had a stormy career under that great teacher and disciplinarian, describing his progress to the upper sixth as having been "at the point of the cane"; but he left school with a sound classical training, besides winning many sporting trophies, and throughout his life made a hero of his old headmaster. In 1873 he proceeded for his medical education to St. George's Hospital, won a Brackenbury scholarship, took the English diplomas, and became house physician and assistant demonstrator of anatomy. In 1881 he obtained the F.R.C.S. and went into private practice in Sussex Gardens, where he resided until the end of his life and where he conducted a general practice with great ability, and also with extreme generosity towards his less affluent patients. The practice was always a good one, but, with Turner, ministry to the sick was ever in the front of his thoughts. In addition to private practice he was consulting physician to the Paddington Home of Rest and visiting apothecary at St. George's Hospital. But his record of public work was so full a one that his position as a doctor was somewhat obscured in the eyes of many who did not know that his forcible and clear-cut views on the promotion of the physical well-being of the nation and on the conduct and status of the medical profession were informed throughout by his personal experience as a successful practitioner.



MR. E. B. TURNER.

[Photograph by F. A. Swaine

It was not until the conflicts over national insurance arose that Turner manifested any overt interest in medical politics, but the early shape of the proposed legislation, with its unfortunate attitude towards medical practice, drew him into the conflict between the promoters of the Bill and the general practitioners of the country. He put his views and those of many others with conviction and fluency and was soon recognised as a courageous champion of medical rights. He devoted time and energy in demonstrating the injustices inherent in an immature piece of legislation, and when the struggle died down he remained convinced that the compromises, however largely they might have been in favour of the medical profession, were a mistake in result as well as in tactics. This work brought him into the prominent notice of the British Medical Association. He became a member of the council and for three years, 1915–18, was chairman of the Representative Body. In 1920 he was elected one of the Direct Representatives of the profession on the General Medical Council, a seat which he held for five years. At the Council meetings he exercised an influential voice, and on his retirement the President, in his annual delivery, said that Turner's presence would be missed as one "whose vigorous fluency of address and intimate acquaintance with divers sides of medical life and practice had often given colour to grey debates."

During the war Edward Turner did much valuable work. A chief medical officer of the special constabulary, he was selected for a special honour for bravery during an air raid, while he was untiring in his labours for promoting physical well-being among the soldiers. Day after day he gave counsel to our young army on the maintenance of health and on the avoidance of the risks of venereal disease to which they were subjected. His eloquent, sometimes homely, and always forcible deliveries were a source of strength and comfort to large numbers of lads during that long period of trial, and Turner's diary during those dark days would have constituted a claim for public recognition far higher than that which could be put forward for many who received high honours. In his public discourses on venereal disease he had the advantage of particular familiarity with the facts of its incidence, for from the first he had been prominent in the deliberations of the National Council for the Combating of Venereal Disease. And when the programme of that body became steadily enlarged, as the British Social Hygiene Council, with the necessary reconciliation of conflicting views among the leaders, Turner became chairman of the executive and propaganda committees, and a vice-president, being until the day of his death a moving spirit in its activities. He was a medallist of the Order of the British Empire, and a member of the Advisory Committee on Social Hygiene of the Colonial Office, and he wrote in various quarters in support of sanitary progress. But though he spoke regularly at meetings of medical societies he was an infrequent writer. In these columns and in the *British Medical Journal* he recorded his experiences of influenza epidemics in general practice, and he wrote in the Badminton library on cycling from the medical standpoint.

Turner was an enthusiastic sportsman. He came to St. George's Hospital as a winner of school athletic prizes and a keen footballer, and while at the hospital was a member of the Rugby football team which secured for three or four years in succession the inter-hospital cup for a small medical school. In 1875, while still a student, he was selected to play for England, and for the next three years he played for his country,

once at least in an England team which included his younger brother, Sir George Turner. On the racing track he won many prizes, among others the inter-hospital mile, and was elected on the committee of the London Athletic Club of which he eventually became president. He was an enthusiastic devotee of the tricycle, and when his football days were over, and the exigencies of private practice filled his working day, he took up tricycling as a means of exercise, with the result that he broke the world's record, amateur and professional, for distances from 2 to 25 miles and eventually held all the records on the racing track, and (with S. Lee) the 50 mile tandem record on the road. Despite the fact that he had lost the sight of one eye, through diphtheritic infection incurred when he was a house physician, he became a first-class game shot, and at 40 years of age he took up yachting, owned, sailed, and raced a small yacht, and with characteristic enthusiasm worked for and obtained an extra-master's certificate in navigation, a possession which he shared with only two other amateurs.

Mr. Turner married Margaret Isobel, daughter of the late Henry Scott of Bombay and Hyde Park-street, London, who survives him and by whom he had four daughters.

WILLIAM ELDER, M.D., F.R.C.P., F.R.S.Edin.

Dr. William Elder, who died in Edinburgh on July 3rd, at the age of 66, came of a family of farmers well known in East Lothian. He graduated at the University of Edinburgh in 1885 and took the M.D. in 1896. After a resident post in the Infirmary and some experience of practice, he was appointed as assistant physician to Leith Hospital and a year later as full physician, retiring in 1909. He established a large general practice and soon became recognised as a thorough and reliable clinician; though technically a general practitioner, he developed the status of a consultant. From the beginning, he was especially interested in the central nervous system. His M.D. thesis, which gained a gold medal, was on Aphasia and the Cerebral Speech Mechanism, and later he published a book on "The Physical Basis of Memory" and contributed several articles to the *Encyclopædia Medica*. He wrote a number of papers on cerebral cases, on pernicious anæmia and other conditions emerging in his clinical work, but his primary interest was psychology, both normal and morbid. His last book, "Studies in Psychology," was a careful study of memory, emotion, consciousness, sleep, dreams, and allied mental phenomena. The book indicates wide reading, checked and criticised by clinical experience, and is full of interesting argument. His practical criticism of psychotherapeutic methods was the work of a reflective physician, who brought a wide general culture to the assistance of his profession.

Dr. Elder is survived by his wife, Dr. Eleanor Russell. A younger brother, George Elder, a man of equally great promise, died many years ago.

MEDICAL NEWS

Royal College of Surgeons of England.

On July 2nd three Fellows were elected into the Council to fill the vacancies caused by the retirement in rotation of Mr. J. Herbert Fisher, Mr. G. E. Gask, and Mr. Graham Simpson. The result of the poll was as follows:—

ELECTED—	Votes.	Plumpers.
Graham Scales Simpson	659 ..	73
George Ernest Gask	635 ..	12
Albert James Walton	544 ..	35

In all 1105 Fellows voted, including 193 Fellows resident out of Great Britain and Ireland; in addition one vote was found to be invalid and six were received too late. Mr. Simpson and Mr. Gask are re-elected and Mr. Walton is elected for the full period of eight years.

University of Liverpool.

At recent examinations the following candidates were successful:—

M.D.

S. Alstead, R. E. Horsfall, E. D. Irvine, J. Libman, and C. L. G. Pratt.

M.B. AND CH.B. WITH HONOURS.

Class I.—T. L. Hughes.
Class II.—W. J. Chisnall and A. L. Potter.

FINAL EXAMINATION FOR M.B. AND CH.B.

Part III. (1923 Regulations).—M. L. Kaufman.
Part II. (1924 Regs.).—H. T. Cank, L. M. Crooks, W. S. Diggle, H. G. Evans, I. Harris, J. H. Hughes, O. V. Jones, W. W. Laughland, T. E. Lennon, H. F. Loewenthal, A. J. Martinez, P. B. Moroney, J. Sytner, J. V. Tollington, Winifred Walls, A. R. Williams, D. I. A. Williams, and A. Wynroe.

D.P.H.

Part I.—Enid M. Hughes, D. H. Williams, and Mary G. T. Williams.
Part II.—A. C. Briffa.

D.T.M.

J. A. K. FitzGerald.

D.T.H.

F. E. Camps, E. R. Gauld, K. T. Moir, M. Salah el Din, and G. Verghese.

University of Durham.

At recent examinations the following candidates were successful:—

THIRD EXAMINATION FOR M.B. AND B.S.

Pathology, Pharmacology, Public Health, &c.—H. W. Beetham, Chandar Bhan Bhugra, A. G. Bowerbank, D. G. French, Dorothy D. Nichol, S. M. Parker, John Short, and R. T. Wordingham.

University of Birmingham.

On July 4th the following degrees and diplomas were conferred:—

M.D.—*A. C. R. Walton, G. H. Knight, and H. J. Williams.

* With honours

Ch.M.—James Gore.
M.B., Ch.B.—† H. N. Gregg, †A. G. W. Whitfield, and F. H. C. Beards, J. A. R. P. Cant, W. S. Coltart, H. L. N. Davies, R. J. de Carteret, T. A. S. Kennerley, Nancy Laughton, H. J. Riley, Eric Rudkin, M. H. Sherwell, and R. B. F. Usher-Somers.
L.D.S.—J. L. T. Davies, and S. J. Foster.

† With second-class Honours.

Victoria University of Manchester.

At recent examinations the following candidates were successful:—

CH.M.

A. A. Davies.

FINAL EXAMINATION FOR M.B. AND CH.B.

* T. S. Heslop.

* First-class Honours.

† Nancy N. Carter, † J. C. Smith, † G. G. E. Smyth, Frank Cort, H. B. Craigie, P. M. Crowe, Frank Livesey, Edith A. Longson, J. P. Longworth, Simon Mills, Gerald Ramage, John Scully, Barnet Stone, Isaac Sutton, Kenneth Todd, and C. H. T. Wade.

† Second-class Honours.

FINAL EXAMINATION FOR L.D.S.

Marion Bentz, Henry Dellow, G. W. Hargreaves, J. W. Lord, and Maurice Sheldon.

Fellowship of Medicine and Post-Graduate Medical Association.

A course in general medicine and surgery will be held at the Miller General Hospital from July 20th to 31st, daily, from 10.30 A.M. to 5.30 P.M. Though not restricted to practitioners, this course is primarily intended for them. A course in urology will be given at the All Saints' Hospital, Vauxhall Bridge-road, from August 4th to 29th. From the 17th to the 29th a course in Diseases of Children will be given at the Queen's Hospital for Children, Hackney-road. Courses in September will include: Diseases of the Chest, at the Brompton Hospital; Psychological Medicine, at the Bethlem Royal Hospital; Diseases of Infants, at the Infants' Hospital; ophthalmology, at the Central London Ophthalmic Hospital; and general medicine and surgery, at the Westminster Hospital, followed by a similar course at the Metropolitan Hospital. All syllabuses may be obtained from the Fellowship at 1, Wimpole-street, London, W.1.

Mental Hospitals Association.

The thirteenth annual meeting of this association will be held at the Guildhall, London, on Wednesday next, July 15th, at 11 A.M.

St. Thomas's Hospital Dinner.

The old students' dinner will be held on Friday, Oct. 2nd, at the Mayfair Hotel, Berkeley-street, London, with Mr. J. Herbert Fisher in the chair. A portrait of Sir Cuthbert Wallace, painted by Mr. George Harcourt, R.A., will be presented by the chairman.

A Hospital Garden Party.

On Wednesday last week the Prince of Wales lent the grounds of Marlborough House for a children's garden party in aid of the restoration fund of the Children's Hospital, Great Ormond-street. The occasion took the form of a fair with a large variety of amusements, and some of the numbered programmes carried prizes which were distributed by Sir James Barrie.

Course on Surgical Tuberculosis.

Under the direction of Dr. Etienne Sorrel, a course of 12 lectures on surgical tuberculosis and other affections of the locomotor system will be given at the Hôpital Maritime at Berck-Plage, Pas-de-Calais, France, from August 3rd to 14th. Particulars are obtainable from Dr. Delahaye at the hospital.

Hygiene and Nursing in the Tropics.

The British Red Cross Society will hold a course of nine lectures and demonstrations on Tropical Hygiene and Nursing, beginning on Monday, Sept. 28th, at 5.30 P.M. This course is intended for people going to warm climates for the first time. Particulars may be obtained from the county secretary, 9, Chesham-street, London, S.W.1.

Medical Uses of Seaside Resorts.

Dr. Carl Häberlin, of the Marine Hospital at Wyk, on the island of Föhr, near Heligoland, is opening a discussion at the Section of Hydrology and Climatology of the British Medical Association on the Treatment of Delicate Children at the Seaside. The Section is holding a reception for him at the Saffrons Rooms, Eastbourne, on Wednesday, July 22nd, at 5.30 P.M., and invites the attendance of members of the medical profession who are interested in the organisation and development of marine health resorts.

Rockefeller Medical Fellowships.

The Medical Research Council announce that, on behalf of the Rockefeller Foundation, they have awarded travelling Fellowships for 1931–32 to: Ernest Thomas Conybeare, M.B., of Guy's Hospital; Gordon Moncrieff Dean, M.B., of the Department of Surgery, Aberdeen University; Morris Harris Finkelstein, M.B., of the Department of Bacteriology, Edinburgh University; Owen Stanley Gibbs, M.B., late Professor of Pharmacology in Dalhousie University, Canada; Emanuel Mannie Lourie, M.B., of the Liverpool School of Tropical Medicine; Allan William Spence, M.R.C.P., of St. Bartholomew's Hospital; Conrad Hal Waddington, M.A., of the Strangeways Research Laboratory, Cambridge; and Kenneth Harold Watkins, F.R.C.S., of the Royal Infirmary, Manchester.

The Fellowships awarded to Dr. Gibbs and Mr. Waddington are tenable in Europe, the others at centres in the United States. Dr. Conybeare and Mr. Waddington have been appointed on modified conditions while receiving emoluments from other sources.

Royal Society of Tropical Medicine and Hygiene.

The Chalmers medal, founded in memory of the late Dr. Albert Chalmers, has been awarded to Dr. N. Hamilton Fairley for distinguished original work in tropical medicine, particularly on the serology of helminthic infections.

Benefaction for Research on Puerperal Fever.

At a dinner held on July 6th, at the Savoy Hotel, in aid of Queen Charlotte's Maternity Hospital rebuilding fund, Sir Thomas Horder stated that the Rockefeller Foundation had entrusted the Medical Research Council with funds to the value of £21,000, spread over seven years, to be used for the further assistance of research work into puerperal fever and other causes of maternal mortality, in which the Council were coöperating with the hospital.

Brighton and Hove Provident Dental Hospital.

This institution, which has for so many years carried on its work in Queen's-road, Brighton, is about to be transferred to new premises in Buckingham-road. To adapt the large private house into a hospital, and equip it suitably, will entail a large expense, and at the annual meeting of the governors on June 4th it was intimated that the hospital would be making its first big public appeal. In 1930, no fewer than 5589 patients were treated at the hospital, which was 615 more than in 1929. The great increase is attributed to the working of the Sussex provident scheme.

Hospital Libraries.

The trustees of the British Red Cross Society and Order of St. John Hospital Library will be at home on Wednesday, July 15th, at 5.45 for 6 P.M., in the new nurses' home of the Middlesex Hospital, London, W. The speaker will be Dr. Barrie Lambert, chairman of the central public health committee of the London County Council.—At a summer school to be held by the Library Association at Birmingham there will be a session for hospital librarians on August 22nd, at 11.30 A.M. Speakers will include Dr. Nairn Dobbie. Also, at the Library Association's annual conference at Cheltenham a session will be devoted to hospital libraries (August 31st, 5.30 P.M.) and Sir Bruce Bruce-Porter will give an address.

Post-graduate Training for Ship Surgeons.

On the recommendation of a committee consisting of representatives of the shipping companies, the Ministry of Health, the London School of Hygiene and Tropical Medicine, the Seamen's Hospital Society, and the British Medical Association, a programme for post-graduate courses for ship surgeons has been formulated, and some of the lectures and demonstrations began at the Devonport pathological laboratory of the Seamen's Hospital Society at Greenwich on Monday last, July 6th. The principal objects are to enable ship surgeons to take "refresher" courses, and for candidates for such posts to receive special instruction in many subjects—e.g., ship's hygiene, Board of Trade requirements, and clinical work, in their special application to conditions on board ship. Instruction on tropical medicine and hygiene will be given at the London School of Tropical Medicine and the Hospital for Tropical Diseases. Ship surgeons will be able to obtain a diploma for special efficiency in subjects germane to their calling, and although it is not proposed that this should be an essential qualification for appointments, the shipping companies have lent their support to the arrangements. Particulars are obtainable from the Seamen's Hospital Society, Greenwich.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS.

STERILISATION OF DEFECTIVES.

A BILL legalising the voluntary sterilisation of mental defectives will shortly be introduced in the House of Commons by Major A. G. Church. The object of the Bill is to make the sterilisation of mental defectives a lawful act upon their own application or that of their parents or guardians, the expression "guardian" including "any person who undertakes or performs towards a defective the duty of a parent or guardian or has charge of him." The voluntary nature of the Bill is well guarded. First, if the subject be capable of expressing willingness consent must be obtained; secondly, in the case of the married defective the other partner must agree; thirdly, the consent of the Board of Control must be obtained, and the operation must be approved by judicial authority—e.g., a bench of magistrates. The operative interference is defined in the Bill as follows:—

(1) The expression "sterilising operation" shall mean vasectomy, salpingectomy, and any other surgical operation whereby the patient is rendered incapable of procreation or child-bearing without the capacity to exercise the sexual functions being otherwise impaired.

(2) Any medical treatment which attains the same result as a sterilising operation with the same limitation in its effect as regards the sexual functions shall be treated as a sterilising operation for all the purposes of this Act.

CREWS' ACCOMMODATION ON BRITISH SHIPS.

Mr. GRAHAM, President of the Board of Trade, in reply to Sir Basil Peto, said that since the regulations as to crews' accommodation were last revised in 1923, the standard of accommodation has been rising, especially in new ships,

in many of which the accommodation provided is above the minimum laid down in the regulations. Complaints, however, have been received that the accommodation on British ships is unsatisfactory, and compares unfavourably with that on certain foreign, especially Scandinavian, ships. These complaints are always investigated individually, but to obtain a true picture of the conditions throughout the British Mercantile, the Board of Trade arranged for a comprehensive survey by their surveyors, who were instructed when visiting ships in the normal course of their duties to investigate and furnish particulars of the condition of the crew spaces on all ships, both British and foreign, visited by them during the period December, 1927, to March, 1928. In addition, the Shipping Federation appointed in May, 1929, a special committee to advise owners as to arrangements for the comfort and convenience of crews. This committee has made two reports relating to the accommodation of seamen other than lascars, one dealing with new cargo ships of 1500 tons gross and upwards, and the other with new cargo ships below that tonnage. A number of valuable recommendations are made, many of which go beyond the existing Board of Trade regulations. Model plans are appended to the reports showing arrangements for the crew, which would give a floor area and cubic capacity considerably in excess of the present statutory minimum, and indicating that, in the great majority of new ships, including even those of relatively small tonnage, it should be possible to provide a separate messroom for the crew. A special arrangement of the sleeping berths avoids double tiers of bunks, and useful suggestions are made in connexion with washing and sanitary facilities. Central heating by hot water is recommended for ordinary cargo ships, other than tankers; the importance of adequate ventilation and heating is recognised. The provision of an isolation hospital on all large foreign-going cargo vessels is also recommended. The committee lays special stress on the proper supervision and cleansing of the crews' quarters, and suggests the imposition of penalties for failure. These recommendations, as originally made, applied particularly to new ships of 1500 tons gross and over, but the shipping federation have agreed with the Board of Trade that they should be adopted wherever practicable irrespective of the size of the ship. The reports have been examined in the Department and also by the Joint Advisory Committee of the Board of Trade and the Ministry of Health on the health of the Mercantile Marine, and the opinion, both of the Board and of the joint committee, is that if the recommendations are followed, a material improvement in the standard of accommodation will result. The recommendations have also been considered by the Merchant Shipping Advisory Committee who have expressed the opinion that the recommendations should be of great value in securing improvements in the accommodation provided in new ships. The Board of Trade have given their general approval and will take action to give effect to the recommendations. They are circulating to their surveyors particulars of the recommendations, instructing them to ascertain, in the case of all new ships, the proposals as regards crew spaces as early as possible, so that, if necessary, they can approach the owners and builders and discuss with them the possibility of making appropriate improvements. The reports do not deal in any great detail with existing ships, as there must, of necessity, be great difficulty in securing improvements involving structural alterations. But in lavatory and washing accommodation the Board agrees that much can be done, as well as by the substitution of metal bunks for wooden berths, and the proper lighting, ventilation, painting, and cleaning of the crews' quarters. The surveyors are being instructed to secure improvements of this nature in cases where the age and condition of the ships and the particular trades in which they are engaged warrant the improvements.

MINING INDUSTRY WELFARE.

On July 7th, in reply to a question by Mr. LAWTHER, who asked the Secretary for Mines if he could state the names of the members of the committee to investigate the work of the Mining Industry Welfare Act, Mr. SHINWELL (Secretary to the Mines Department) said that the committee had now been constituted as follows:—Viscount Chelmsford (chairman), Lord Erskine, M.P.; Mr. G. Macdonald, M.P.; Mr. G. Mander, M.P.; Mr. A. K. McCosh (nominated by the Mining Association of Great Britain); and Mr. Alfred Smith (nominated by the Miners Federation of Great Britain). The terms of reference would be: to inquire how far the objects of Section 20 of the Mining Industry Act, 1920, have been met, what remains to be done, and whether the scope of the fund and the existing machinery for its administration as defined in that Section and as developed in practice are satisfactory for the future; and to report on all these matters with particular reference to the question of the amount and duration of the levy in the future.

Rural Housing.

In the House of Commons on Tuesday, July 7th, the Financial Resolution authorising the Minister of Health and the Scottish Department of Health to assist rural district councils in England and county councils in Scotland to provide houses in rural areas was agreed to in committee.

In the House of Lords on July 7th, the Merchant Shipping (Safety and Load Line Convention) Bill was read the third time and passed. The Bethlem Hospital (Amendment) Bill passed the report stage. The Marriage (Prohibited Degrees of Relationship) Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, JULY 1ST.

Motor Accidents and Danger Signs.

Mr. HURD asked the Minister of Transport if his attention had been called to the increase of motor accidents, often fatal, through collisions at cross-roads; and whether he would approve of a standard form of danger sign to be erected at these points.—Mr. MORRISON replied: I am not aware of any evidence that motor accidents at cross-roads are increasing. There is already a standard international sign giving warning of the approach to cross-roads which has been erected in large numbers throughout the country. I propose shortly to review the whole question of road traffic signs in connexion with the provisions of Section 48 of the Road Traffic Act, 1930.

Foreign Strawberry Pulp and Preservatives.

Sir THOMAS INSKIP asked the Minister of Health (1) whether the use of chemicals such as sulphur dioxide or lime as preservatives would be allowed in the case of foreign strawberry pulp about to be imported during the next four weeks; and what steps he proposed to take to prevent the risk of injury to health by the use of such preservatives; and (2) whether he was aware that the importation of foreign strawberry pulp, dressed with sulphur dioxide or other chemicals as preservatives, was about to take place; and whether he was prepared to take such steps as might be open to him to prevent such importation and, if so, what steps.—Miss LAWRENCE replied: Under the Preservatives Regulations the only chemical preservatives allowed in strawberry pulp are sulphur dioxide and sulphites. My right hon. friend understands that the use of these preservatives is regarded as a commercial necessity for both home-produced and foreign fruit, and in view of the small residual amount allowed in the jam made from the pulp he does not think that he would be justified in amending the regulations so as to prohibit their use.

THURSDAY, JULY 2ND.

Pharmacy and Poisons Bill.

Mr. BROMLEY asked the Home Secretary whether he had considered the representations made to him by the pharmaceutical organisations on the subject of the Pharmacy and Poisons Bill; and whether he proposed to take any steps to meet the objections raised by these organisations.—Mr. CLYNES replied: As there has been a good deal of

misunderstanding about the scope and objects of the Poisons and Pharmacy Bill, I crave indulgence for a somewhat lengthy statement. This Bill is based upon the recommendations of a Departmental Committee which was appointed by the previous Administration, and reported in 1930. The committee which, apart from its pharmaceutical members, was entirely independent of any of the commercial interests affected, found that the existing position relating to poisons was far from satisfactory, and the object of the present Bill is to provide for a wider and much more effective regulation of poisons than exists at present. I understand that the pharmaceutical associations take exception to the Bill on two main grounds. In the first place they demand that all doctors' prescriptions, whether they contain poisons or not, shall be dispensed by registered pharmacists only. This proposal does not, however, come within the scope of the Bill. Moreover, it has never been investigated, and even if it were assumed that there was a prima facie case for considering that the demand is in the public interest, the Government could not ask Parliament to adopt such a proposal except after adequate inquiry and after the interests of those who would be affected by the prohibition had had opportunity of stating their case. Secondly, the pharmacists demand that the increased facilities which the Bill proposes for the supply to farmers of agricultural poisons shall be limited to firms carrying on a bona fide business in the supply of agricultural requisites. I am advised by the Minister of Agriculture and by the Board of Agriculture for Scotland that this limitation would not make adequate provision for legitimate needs in the more rural districts. The Government, however, have decided to propose an amendment to the Bill which will have the effect of requiring the Poisons Board and the Secretary of State, in considering the allocation of poisons as between Part I. and Part II., to have regard to the desirability of restricting the contents of Part II. (which will contain the list of poisons which may be sold by persons other than pharmaceutical chemists) so far as is consistent with the provision of adequate facilities for the public to obtain supplies of non-medical substances which are in common use.

Schools for Mentally Defective Children.

Mrs. MANNING asked the President of the Board of Education the number of special schools for mentally defective children which had been opened during the years 1926, 1927, 1928, 1929 and 1930 respectively.—Mr. LEES-SMITH replied: The numbers of special schools for mentally defective children open during the years in question were five in 1926, four in 1927, none in 1928, four in 1929, and one in 1930.

Insured Persons and Sickness Benefit.

The Marquess of TITCHFIELD asked the Minister of Health whether he had read the report by Sir Walter Kinnear, the Controller of the National Health Insurance Department, which stated that a recent investigation showed that 12 persons out of 100 were drawing sickness benefit when they were capable of returning to work; and whether he proposed to take any steps to rectify this state of affairs.—Mr. GREENWOOD replied: I am aware of the statement referred to, which was to the effect that out of a large and representative group of insured persons who were in receipt of sickness or disablement benefit on a certain day, and whose title to benefit was made the subject of special investigation, it was found that 12 per cent. were capable of work and consequently not entitled to benefit. I have already addressed circulars to all approved societies and to all insurance medical practitioners on the steps to be taken to avoid payment of benefit to persons not entitled thereto, and I would also refer the noble Lord to the reply which I gave to the right hon. Member for West Woolwich on June 18th.

Slum Clearance and Plague of Vermin.

Sir MARTIN CONWAY asked the Minister of Health whether he was aware that, owing to the recent destruction of some slum houses in Westminster which belonged to the London County Council, a plague of vermin, notably of the species *Acanthia lectularia*, had invaded certain streets within the borough; and whether he would take steps to see that the municipal authorities disinfected the houses attacked by this pest, seeing that the insects in question were well-known carriers of infection of certain diseases.—Mr. GREENWOOD replied: I was not previously aware of the facts stated in the first part of the question. I have no power to give directions to the local authorities in this matter, but I will communicate with them and inform the hon. Member of the result.

Sir M. CONWAY: Is the right hon. gentleman aware that the female of this enterprising insect lays eggs four times a year, 50 at a time, so that the eradication of a pest of that sort exceeds the powers of the dwellers in most private houses; and will he call the attention of the Westminster municipal authorities to the fact that the Chelsea municipal authorities undertake the extirpation of this enterprising insect, and ask them if they will follow the example of Chelsea?

Mr. GREENWOOD: I will certainly do my best to bring this interesting information to their notice.

Protection Against Poison Gas.

Brigadier-General CLIFTON BROWN asked the Prime Minister whether, in view of the scheme detailing measures which should be taken for the protection of civilians from poison gas which was recommended by an international committee of experts in 1928, any steps had been taken on the matter in this country; and what steps had been taken by foreign nations.—Mr. MACDONALD replied: The report to which the hon. and gallant Member refers has been brought before the Standing Subcommittee of the Committee of Imperial Defence concerned with these matters. Various foreign nations are known to be actively studying this question, but I am unable to say what steps they are taking. As I have said in answer to previous questions on this subject, the ratification of the Geneva Gas Protocol of 1925 by most of the countries in Europe provides an important safeguard against this form of attack.

Registration of Illegitimate Children.

Mr. DAY asked the Minister of Health whether, in view of the present regulations existing for the registration of illegitimate children, he would consider the introduction of legislation which would have as its object the registration of the birth of these children in such a way that they did not bear the stigma of illegitimacy.—Mr. GREENWOOD replied: I would remind the hon. Member that the primary object of birth registration is the establishment of a record for the purpose of furnishing legal evidence in regard to matters of civil status, and that so long as a distinction is drawn by the law for many important purposes between legitimate and illegitimate children, the obliteration of this distinction in the birth register would merely destroy its utility to a very large extent, without affording any compensating advantages to the individuals affected.

MONDAY, JULY 6TH.

Nursery Schools.

Dr. HASTINGS asked the President of the Board of Education the number of nursery schools completed, being built, and sanctioned in connexion with provided and unprovided schools to date, and how many of these schools in each class were of the open-air type.—Mr. MORGAN-JONES (Parliamentary Secretary to the Board of Education) replied: There are 44 nursery schools recognised by the Board of Education, 23 being provided schools, and 21 voluntary schools. There are 11 provided, and three voluntary schools in course of erection. In addition, preliminary proposals have been sanctioned for 12 provided schools. Practically all the schools now being built are open-air schools; of the existing schools the majority are planned on open-air lines, and the remainder have good open-air facilities.

Post-graduate Medical School.

Dr. HASTINGS asked the Minister of Health what progress was being made in the arrangements for post-graduate teaching in the Hammersmith Hospital.—Miss SUSAN LAWRENCE (Parliamentary Secretary to the Ministry of Health) replied: A Royal Charter constituting the Governing Body of the British Post-graduate Medical School and defining the functions of the Governors was approved by the King in Council on June 29th; and active steps are being taken, in collaboration with the London County Council to proceed as quickly as possible with the planning and building of the school, and with the adaptation of the hospital for the purposes of post-graduate medical education.

Dr. HASTINGS asked if Miss Lawrence had any idea when the school would be opened for teaching purposes.

Miss LAWRENCE said that she could not say at the present moment.

A RAILWAY BED.—A bed in the Norfolk and Norwich Hospital has recently been endowed by the London and North-Eastern Railway staff hospital fund of the Norwich district. It has been named "The Drury Bed," in recognition of the services to the institution of Mr. H. W. C. Drury, who until recently was superintendent of the Norwich district of the railway.

Appointments

HOLDERNESS, R. C., M.B., B.S. Lond., D.P.H., has been appointed Asst. Medical Officer of Health, Bury.

City of London Maternity Hospital, City-road, E.C.: WALLACE W. H. S., M.B., B.S.Lond., Resident Medical Officer, and BARBER, A., L.R.C.P. Lond., M.R.C.S., Assist. Resident Medical Officer.

Certifying Surgeons under the Factory and Workshop Acts: HILL, R. M., M.B., Ch.B. Glasg. (Tooting); CRAIG, J. (Grosmont, York).

Vacancies

For further information refer to the advertisement columns.

Aberdeen, City of.—M.O. in charge of the Council's Mental Health Services. £950.

Accrington, Victoria Hospital.—H.S. £150.

All Saints' Hospital for Genito-Urinary Diseases, 91, Finchley-road, N.W.—H.S. **At rate of £150.**

Barnsley, Beckett Hospital and Dispensary.—Cas. O. and H.P. £250 and £200 respectively.

Beckenham, Kent, Bethlem Hospital, Monks Orchard, Eden Park. Res. H.P. At rate of £150.

Birmingham Ear and Throat Hospital, Edmond-street.—H.S. **At rate of £200.**

Birmingham General Hospital.—Two Res. Anæsthetists. Each £120. Also Res. H.P. and three Res. H.S.'s. Each £70.

Birmingham, Midland Hospital, Easy-row.—H.S. £150.

Birmingham P.H. Dept., Tuberculosis Section.—Asst. M.O. £400.

Birmingham, Queen's Hospital.—H.S. for Ear, Nose, and Throat. Also H.P. for Birmingham and Midland Nerve Hospital. Each at rate of £70. Also Dental H.S. At rate of £50–£70.

Birmingham, Selly Oak Hospital.—Casualty O. **At rate of £200.**

Blackburn County Borough.—Asst. M.O.H. and Asst. School M.O. £500.

Bolton Infirmary and Dispensary.—Two H.S.'s. Each £150.

Bradford Children's Hospital.—H.P. £120.

Bradford Royal Infirmary.—Three H.S.'s. Each £150.

Brighton, New Sussex Hospital, for Women and Children.—Hon. Asst. Ophth. S. Also H.P. and H.S. Each £100.

Brighton, Royal Sussex County Hospital.—Two Hon. Med. Registrars. Also three Hon. Surg. Registrars.

Bristol Eye Hospital.—Asst. Res. H.S. £100.

Bristol Royal Infirmary.—Sen. Res. M.O. £200. Also Res. Dental H.S. and Res. Cas. H.S. Each £80. Also Res. H.P.'s and H.S.'s. All at rate of £60. **Also Hon. Asst. to** Obstetric Dept.

Bury Infirmary, Lancs.—Third H.S. At rate of £150.

Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow.—Asst. M.O. At rate of £275.

Dreadnought Hospital, Greenwich.—Physician, for Dept. of Physical Medicine. 50 guineas.

Dudley, Guest Hospital.—Two H.S.'s. Each £160–£170.

Durham County Hospital.—Two H.S.'s. Each £150.

Durham University College of Medicine.—Jun. Demonstrator in Physiology. £250–£300.

East London Hospital for Children, &c., Shadwell, E.—H.S. and Cas. O. £125.

Evelina Hospital for Children, Southwark, S.E.—H.S. At rate of £120.

Exeter, Royal Devon and Exeter Hospital.—H.P. Also H.S. to Spec. Depts. **Each at rate of £150.**

Folkestone, Royal Victoria Hospital.—Sen. and Jun. Res. M.O.'s. At rate of £125 and £100 respectively.

Great Yarmouth General Hospital.—H.S. £140.

Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—Cas. Surg. O. for Out-patient Dept. At rate of £100. **Also H.P.** At rate of £100.

Hove, Lady Chichester Hospital.—Jun. H.P. At rate of £50.

Huddersfield Royal Infirmary.—H.S. At rate of £150.

Hull Royal Infirmary.—**3rd H.S. At rate of £150.**

Inverness, Royal Northern Infirmary.—Two H.S.'s. Each at rate of £100.

Ipswich, East Suffolk and Ipswich Hospital.—**Cas. O. £120.**

King Edward Memorial Hospital, Ealing, W.—Sen. and Jun. Res. M.O.'s. £250 and £150 respectively.

King's Lynn, West Norfolk and King's Lynn General Hospital.—H.P. At rate of £150.

Kingston-upon-Hull, City and County of.—M.O.H. £1500. Also Sen. Asst. M.O.H. for Maternity and Child Welfare Dept. £800.

Lancaster Royal Infirmary.—Jun. H.S. £130.

Leamington Spa, Warneford, General Hospital.—Hon. Surgeon for Diseases of Ear, Nose, and Throat.

Leeds Hospital for Women.—H.S. £100.

Leeds, Tuberculosis Sanatorium, Killingbeck.—Sen. Asst. Res. M.O. £350.

Leicester Royal Infirmary.—Sen. M.O. for Venereal Diseases Dept. £500.

Liverpool Royal, Babies' Hospital, Woolton, and Crofton Recovery Hospital for Women, Aigburth.—M.O. At rate of £200.

Liverpool Royal, Children's Hospital.—Res. M.O. and second Res. M.O. for Heswall Branch. At rate of £180 and £120 respectively. Also two Res. H.P.'s and two Res. H.S.'s for City Branch, Myrtle-street. All at rate of £100.

London Hospital, E.—**Hon. Asst. Anæsthetist.**

London Light and Electrical Clinic, Ranelagh-road, S.W.—Med. Reg. £300.

Manchester, City Education Committee.—**Asst. School M.O. £600.**

Manchester Royal Eye Hospital.—Jun. H.S. £120.

Manchester, St. Mary's Hospitals.—Five H.S.'s. All at rate of £50.

Manchester Victoria Memorial Jewish Hospital, Cheetham.—Jun. H.S. At rate of £125.

Manor House Hospital, Golders Green, N.W.—Jun. M.O. £200.

Maudsley Hospital, Denmark Hill, S.E.—Asst. M.O. £475.

Middlesex County Council.—Ophthalmic Surgeon. £2 12*s.* 6*d.* per session.

Nottingham General Hospital.—Cas. O. At rate of £200.

Plymouth, South Devon and East Cornwall Hospital.—H.S. At rate of £100.

Queen Mary's Hospital for the East End, E.—H.P.

Queen's Hospital for Children, Hackney-road, E.—Res. M.O. At rate of £200.

Reading, Royal Berkshire Hospital.—Res. Anæsthetist. At rate of £150.

Rotherham Hospital.—Cas. H.S. £150. Also H.P. £180.

Royal Northern Hospital, Holloway, N.—Asst. Pathologist. £500.

St. John's Hospital, Lewisham, S.E.—H.S. and Cas. O. Each at rate of £100.

St. Leonard's-on-Sea, Buchanan Hospital.—Jun. H.S. £125.

St. Mark's Hospital for Cancer, Fistula, &c., City-road, E.C.—H.S. At rate of £75.

St. Thomas's Hospital Medical School, S.E.—Sen. Demonstrator in Anatomy. £500.

Scunthorpe and District War Memorial Hospital.—Res. Surgeon. Also second H.S. £250 and £150 respectively.

Sheffield Children's Hospital.—**3rd Res. M.O. At rate of £80.**

Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £100.

Sheffield Royal Hospital.—Cas. O. and Ophth. H.S. £150 and £120 respectively. Also Res. Anæsthetist. At rate of £80.

Sheffield Royal Infirmary.—**H.S., Ophth. H.S., Asst. Aural and Ophth. H.S. Each at rate of £80.**

Society of Apothecaries of London, Water-lane, Queen Victoria-street, E.C.—Examinership.

Southampton, Free Eye Hospital.—H.S.

South London Hospital for Women, South Side, Clapham Common, S.W.—Two H.S.'s. Each at rate of £100.

South Shields, Ingham Infirmary.—H.S. £150.

Stafford, County Bacteriological Laboratory.—Bacteriologist. 12 guineas per week.

Stockport Infirmary.—H.S. £175.

Sutton, Sutton and Cheam Hospital.—Res. M.O. At rate of £100.

Swansea General and Eye Hospital.—H.P. £150. Also Asst. Pathologist. £500.

Talgarth, Breconshire, South Wales Sanatorium.—Jun. Asst. Res. M.O. £250.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—H.P. and H.S. Each at rate of £100.

Warrington Infirmary and Dispensary.—Jun. H.S. £175.

Warwick County Mental Hospital, Hatton.—Second Asst. M.O. £450.

Willesden General Hospital, N.W.—H.P. and H.S. At rate of £100 and £110 respectively. Also Registrars.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Moreton-in-Marsh (Gloucestershire); at Carmarthen (Carmarthenshire); at Bedford (Beds.); at Lutterworth (Leicestershire); and at Holywell (Flints).

Births, Marriages, and Deaths

BIRTHS.

HUNT.—On July 1st, at Welbeck-street, W., the wife of Dr. W. S. Hunt, of a son.

SADLIER.—On July 1st, at "Brown Heath," Buxted, Sussex, the wife of Dr. H. W. Sadlier, of a son.

MARRIAGES.

FAINGES—SMYTH.—On July 4th, 1931, at St. Peter's, Battersea, by the Rev. G. Bell, assisted by Rev. J. M. Cobbett, Donald Sutherland, youngest son of James Fainges, Esq., of Brisbane, Australia, to Doreen Croly, only daughter of Dr. James and Mrs. Smyth, of 382, Upper Richmond-road, Putney, S.W.

GILLESPIE—WALLACE.—On June 30th, at St. George's West Church, Edinburgh, Alexander MacAndrew Gillespie, M.B., D.T.M., M.R.C.P. (Edin.), F.R.G.S., West African Medical Staff, to Mary Agnes, youngest daughter of the late William Wallace and of Mrs. Wallace, Cairnie-street, Arbroath, Angus.

MOYNIHAN—FERGUSON.—On July 4th, at St. Mark's Surbiton, John Holmes Moynihan, M.R.C.S., L.R.C.P., to Sheila Janet Ferguson, M.R.C.S., L.R.C.P., only daughter of Mr. and Mrs. Ferguson, Ardmay Surbiton.

SAVIN—GRIFFITH.—On Saturday, July 4th, 1931, at Wimbledon, Lewis Herbert Savin, M.D., M.R.C.P., F.R.C.S., son of the late Lewis Savin, M.R.C.S., to Mary Helen Griffith, elder daughter of the late Mr. and Mrs. Walter Griffith.

SHAW—GRICE.—On June 30th, at St. Peter's, Caversham, Wilfred Shaw, M.D., F.R.C.S., to Frances Anne, third daughter of Mr. and Mrs. A. G. Grice, of Caversham.

DEATHS.

ANDERSON.—On July 2nd, 1931, at a Manchester Nursing Home, George Reinhardt Anderson, J.P., M.B.E., F.R.C.S., of 45, Westbourne-road, Southport, the beloved husband of Annie Eleanor Anderson. Service at Mornington-road Wesleyan Church, Southport, on Monday last. Funeral at Birkdale Cemetery.

JONES.—On June 29th, at Elm Tree House, High Halden, Kent, Dr. Isaac Stephenson Jones, aged 82.

TURNER.—On June 30th, at Westbourne-terrace, W., Edward Beadon Turner, F.R.C.S., aged 76.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE WORK OF AN INDUSTRIAL CLINIC.

BY N. HOWARD MUMMERY, M.R.C.S. ENG.[1]

[Colonel Mummery began his lecture with a pertinent résumé of the progress made in this country during the nineteenth and especially the twentieth century in the promotion of industrial health, as instanced by the abolition of child labour and the developments in welfare organisation which have marked the world since the close of the war. He continued :—]

The British Position.

"In this country much has been done, but it appears that out of 142,000 factories and 133,000 workshops, large and small, only 2200 of the larger concerns—88 per cent. of which are factories—have so far adopted welfare schemes and employ nurses. Details obtained from 1006 of these concerns show that between them they employ 2022 nurses, of whom 1833 are female and 189 male; 91 per cent. of the female nurses are registered, but only 25 per cent. of the male. The average number of employees per nurse is 963. Of the 1006 industrial concerns providing details, 91 per cent. employ doctors on a full or part-time basis. It is known, however, that the number of medical men and women devoting themselves to this most important branch of professional work is steadily increasing in spite of industrial depression, and the available applicants for such posts greatly exceed the demand."

Commenting on this increase of popularity, Colonel Mummery called attention to Sir George Newman's estimate "that about 50 per cent. of the insured population of England and Wales go on the sick-list every year, and, as the average annual absence from work is computed by him to be 3·73 weeks, we are faced with the appalling fact that seven million persons lose between them 25 million working weeks annually. And although the standard of life has risen and mortality has fallen, sickness claims have risen since the recent war by 41 per cent. for men, 60 per cent. for unmarried women, and 106 per cent. for married women, while, says Sir Thomas Oliver (*Journal of State Medicine*, August, 1930), within the last 30 years the length of sickness has increased from 16½ days to 28 days."

Various factors responsible for the alleged increase in disability, or morbidity, rates, and probably all are contributing to it, were mentioned by the lecturer, who also referred to the difficulties of the panel practitioner in the matter of signing medical certificates to the satisfaction of patients, societies, and medical referees. He continued :—

State Assistance.

"To a large extent the old incentive of 'work or starve' has given way in many cases to an over-liberal State assistance; and we see the public in increasing numbers overwhelming the voluntary hospitals where the staffs are inadequate to supervise economically the period that elapses between restoration of function after injury—or recovery from illness—and the subsequent return to useful paid employment. To these factors tending to increase morbidity statistics one must, strangely enough, add welfare work itself, for recent reports of the Division of Research, Office of Industrial Hygiene, and the United States Public Health Service, show, in that country, that the welfare provision of granting wages during sick absence from work definitely prolongs such absence. Two large industrial concerns in the same metropolitan area and under similar general conditions were compared, and it was found that if wages were entirely lost while the worker was absent on account of illness, the record of absence was much lower for illnesses of short duration than when full wages were paid during such absence. This was attributed, not to malingering, but to the fact that employees tended to stay at home and take more care of their ailments, such as colds, which they could not afford to do if wages were lost at such times. But the conclusion was reached that however advantageous it might appear to employers to pay only for time worked, or for sick benefit societies to withhold sick benefit during the first week's disability, the fact remains that the spreading of disease, which entails such heavy industrial losses, is facilitated by the worker continuing at work, or returning to it, while ill. Lack of provision for sick leave and sick pay falls heavily not only on the employee, but indirectly upon the employer too, and militates against improvement in the public health. The reports referred to—which may be studied with benefit in the *Journal of Industrial Hygiene* for November and December, 1930—confirm others published in this country that the incidence of industrial sick absence is most prevalent among the younger workers and affects the females more than the males; that the duration of sick absence increases with the age of the workers, largely owing to the more serious diseases tending to occur at the later ages when recuperative ability is waning—though it is interesting to note that a group of employees over 70 years of age compared very favourably, as regards annual disability absence, with the younger age-groups.

"In this country we recognise that the State has made provision for the industrial population during physical incapacity by means of National Health Insurance and Workmen's Compensation and Employers' Liability Acts. Some short-sighted employers seem to think that by paying their statutory contributions under the first-named Act, and insuring themselves against the risks of the latter Acts, they are doing all that can reasonably be expected of them and all that good business management calls for. They are unable to see the importance of the personal factor in industry which demands careful study if the best service is to be obtained, and forget that skilled workers cannot be trained in a day, and that nothing is more wasteful than excessive labour turnover and an unduly large absentee list. These State enactments, good as they are, fail to meet fully the needs of the industrial population or those of industry itself. They need supplementary and alternative services which the employer alone is able economically to provide. Industrial welfare provides such additional services as an integral part of good management. It is purely a voluntary service initiated, financed, and controlled by the employer, and not, as a rule, contributed to by the workpeople, nor assisted by the State—though with official recognition of its value certain Home Office regulations and inspections have followed, requiring certain minimum standards in various trades. Welfare services are not, and never should be, mere philanthropic side-shows. They are part of competent industrial management, and a factor in production. They should stand the acid test of their value to the community as a whole, and of their value in assisting the conduct of the industrial or commercial concern to earn good profits and pay good wages. If a welfare scheme fails in either of these directions it becomes a costly form of philanthropy, but it will not fail if conceived and conducted on right lines, and the employer who cares adequately for the well-being and well-doing of the workpeople upon whom his success depends is an astute business man as well as a good citizen. Like all social schemes that are designed to assist the less fortunate members of the community there is always the danger that welfare work may tend to lessen individual self-reliance and

[1] A lecture to the Public Health Division, London School of Hygiene and Tropical Medicine, on May 29th, 1931, by N. Howard Mummery, M.R.C.S. Eng., Lieut.-Col., late R.A.M.C. (Temp.); medical officer in charge, Cadby Hall Clinic, J. Lyons and Co., Ltd.

foster a dependency upon others that is bad both for the individual himself and for the State. Therefore, assistance should supplement, but not replace, the individual efforts of the employee to make adequate provision for himself and his dependents. In all insurance schemes it is essential to their success that they should be drawn upon as little as possible, only in emergencies, and not at regular intervals as a reward for abstention in the interim. In America the view is held that 'wealth is not *in* industry, but that wealth *is* industry, and that every single thing given for nothing or in return for inadequate service is, in effect, so much actual poverty grafted on to the nation. Thus, abuse of any system of insurance is wilful robbery of other people's livelihood and high treason against the State.'

Industrial Health Research Board.

"The Industrial Health Research Board owes its origin to the Health of Munition Workers Committee set up during the war. That Committee, in 1916, recommended that proper organisation of medical services in factories was essential not only for the health of the operatives, but in order to secure improved production and output by preventing loss of time and efficiency among the workers. The Board has the responsibility of investigating such problems as the relationship of age to capacity for work; the influence of diet, alcohol, nutrition, and other factors upon human efficiency; the maximum loads, height of work-benches and chairs most desirable, and, generally speaking, the application of physiology to industrial processes. It places the resources of physiological, psychological, and medical science at the disposal of industrial management. With the individual firm's welfare department and medical officer, however, rests the actual detailed work which a solution of all these problems demands, and in actual practice it is found that many theories, apparently excellent in principle, have to be modified in their application to industrial processes before they are acceptable to the management. Any drastic alteration usually involves initial expense and arouses prompt opposition, frequently from those whom it is most designed to assist. Therefore, physiologists and medical men need to appreciate more fully their need of a wider knowledge of industrial management and industrial processes if their knowledge is to be of the fullest possible assistance to industry.

Industrial Welfare Clinic.

"It will readily be understood that the comprehensive task of caring for factory personnel necessitates the welfare department of a firm interesting itself in almost every factory activity. It is concerned with the engagement and discharge of workers; with their medical examination to determine fitness for the particular job; with the prevention and cure of injuries and illness; with the lighting, heating, ventilation, and cleaning of workrooms; with the working clothing of factory operatives whose almost ineradicable preference for the shoddiest of footwear is so largely responsible for colds and rheumatism; with feeding, housing, and recreation; and, in a large concern, with continuation schools, handwork guilds, and even in creating a social life for its employees by means of clubs and sports-grounds. Its activities extend beyond the factory precincts into the homes of the workpeople, where the welfare visitor keeps in touch with them during illness, and into the hospitals and other institutions into which they may go.

"Welfare work necessarily must vary widely with, and be governed by, the size and resources of the individual firm; by the urban or rural distribution of its employees, and by the policy of its directors. It varies indeed from the statutory first-aid box per 150 employees, at the bottom of the scale, to the provision of an up-to-date hospital clinic, comprising doctors, nurses, dentists, masseurs, at the top of the scale. Many of these welfare activities are in the hands of the lay superintendent and assistants of the department, and I am confining myself to those which more directly come within the scope of the clinic attached to it. The lay-out or plan of such a clinic is important. It should be easy of access from all parts of the factory, and as far as possible away from noise. The essential features are: A waiting-room with seating accommodation under clerical supervision, with an ample filing-room near the entrance. Each employee on arrival and departure is given a time check showing the time spent at the clinic; this he takes back to his manager with any necessary report from the medical officer. Details of every attendance at the clinic are carefully recorded on clinical cards, which, together with the medical officer's notes of condition on engagement, previous illness or injuries, and all other relative documents, are kept in cardboard folders in the filing-room. The surgery, fitted with basins, foot-bath, hot and cold running water, and necessary tables, chairs, cupboards, &c., should communicate through a curtain with the doctor's consulting-room, and on each side of the inter-communicating doorway should be a small dressing-room containing a couch and chairs. These are invaluable when patients have to be got ready for examination. A separate rest room for serious cases is also a necessity. The equipment of the doctor's room should include facilities for vision testing and most of the ordinary aids to clinical diagnosis, among which an X ray apparatus will be found particularly valuable."

FUNCTIONS OF AN INDUSTRIAL CLINIC.

These, said the lecturer, include all means, preventive and remedial, taken to reduce to a minimum the working time lost by employees owing to illness and accidents.

The Medical Examination.

"First in importance is the medical examination of all candidates for employment, carried out with special regard to the nature of the work—not in order to select only the fittest and reject all those who have disabilities, but rather to place all candidates with satisfactory references in work at which the defect or weakness will not be aggravated, unduly increase the industrial risk borne by the employer, nor prove a bar to efficient and profitable employment. Few people are completely healthy, and Dr. René Sand has stated (THE LANCET, August 23rd, 1930) that though 80 per cent. have healthy hearts, lungs, and kidneys, normal weight and posture are enjoyed by less than 50 per cent. of people who think themselves fit; less than half have normal vision, normal teeth, or a normal nasopharynx; and about 40 per cent. have habitual constipation. Actually the number of applicants rejected is surprisingly low. In 1929 I examined 2675 men and women for employment, and rejected only 3 per cent., and in 1930 2415 with 2·4 per cent. of rejections. The factory doctor undertaking this vocational selection must be familiar with the various processes of manufacture and distribution in his factory, and will have tabulated these processes, recording against each group of workers the disabilities which should prohibit such employment, and what special attributes each process calls for. He will have tried to discover any special capacity or characteristic, or even physical disability, that is common to the best workers in any group and lacking in the others, and will endeavour to pick out for employment those who seem to possess it. A few illustrations will serve. Telephone operators should be of average height to work comfortably at the exchange switchboard; they should have well-developed back muscles, good hearing, and memory for spoken numbers, good sight, and a clear enunciation, be capable of sustained attention with a short time reaction, and an equable temperament, and be free of naso-aural-pharyngeal disease. Motor drivers are required to have a minimum vision of six-twelfths normal in each eye, and to be free of corneal opacities likely to occlude the contracted iris in a bright light at night. Epilepsy, petit mal, cardiovascular disease, or marked deafness is a disqualification. Bakers,

pastry-cooks, confectioners, and others exposed to recognised trade irritants, call for special attention to the skin state, any marked degree of seborrhœa, ichthyosis, hyperidrosis, or endocrine-sympathetic unbalance, causing chilblains and purple extremities, being disqualifications. Cleaners and scrubbers are exposed to soda irritation and water maceration of the hands, and to tibial bursitis from kneeling. Special attention, therefore, is directed to the state of these parts. Porters are specially examined for hernia and as to general development. Waitresses require examination for signs of weak spinal muscles tending to scoliosis, which is apt to develop from carrying heavy trays on the left arm, and for any tendency to pes planus, which is common among them. Naturally, the doctor is supplied, on a convenient form, with particulars of the employment suggested. Working on a definite routine with the aid of trained nurses, who, in the case of women and girls, make a complete preliminary inspection, these examinations can be carried out rapidly and with a surprisingly high degree of accuracy in spite of the fact that where large numbers have to be seen the scope of the examination cannot always include urinary and certain other desirable tests unless there is reason to suspect their special desirability. No opposition to these examinations has been experienced, either from the individuals themselves or from trade-unions, and it is difficult to understand how there could be any when the object of the examination is so clearly in the interests of both.

Periodic Re-examination.—Examination on Return.

"The periodic re-examination of young or underdeveloped persons and of those exposed to special occupational risk is essential. This includes the weekly inspection of the skin of all workers handling sugar, flour, dough, cream icing, and other known irritants. As will be mentioned later, the weekly manicure of such employees also provides a valuable means of watching for early signs of dermatoses and referring them to the medical officer. The record of weight taken on engagement provides a valuable means of checking the physical development of young persons, a very large number of whom are employed in clerical departments of my firm. The re-examination, in modified form, of employees on re-engagement on temporary or seasonal staffs should be carried out.

The examination on return from illness is hardly less important. The factory doctor, knowing the nature of the patients' employment, is favourably placed to judge of their fitness to resume work, and it is found that, far from his duties in this respect being a source of friction with the panel medical practitioner, the latter very often sends the employee to the factory doctor before issuing the final certificate of fitness for work. This routine visit of all sick absentees to the clinic on leaving or resuming work acts as a very wholesome check on unnecessary or unduly prolonged absence, and when, as is the case with my firm, the management grants wages, less panel sick benefit, during sickness, in accordance with a scale dependent upon length of service and a satisfactory report on each case from the factory doctor, there is every encouragement for recovery and little opportunity for malingering. It also enables the firm's medical officer to safeguard other employees from the premature return of those suffering from infectious diseases, and this raises the very interesting problem of quarantine of contacts with these diseases. Except in scarlet fever, where there has been close contact with the disease, and the usual period of quarantine is generally advisable, exclusion from work usually appears unnecessary, though one considers whether the contact works in the open or in a room with young and susceptible persons. Variola contacts, with the agreement of the district medical officer of health, are allowed to resume duty after revaccination. Diphtheria contacts, especially if negative throat swabs have been obtained, may generally continue at work, but for a week have the throat examined by the factory nurse each day before commencing duty. Contacts with measles, rubella, varicella, and mumps are allowed to remain at work provided they keep out of the sick room. Public conveyances and cinemas are such prolific sources of infection that the rigid exclusion of contacts from factories appears to me a useless waste of working time, and so far the above measures have never failed to prevent the diseases spreading in the factory. On the other hand, great care is taken in regard to any possible infection from an occasional case of enteric or paratyphoid fever and to detect any carriers of these diseases.

Diagnosis and Treatment of Minor Illness.

"Such medical emergencies enter largely into the work of the clinic. What chiefly is required of the doctor in charge of a factory clinic is a sound general experience of clinical medicine and surgery, the ability to make a prompt diagnosis and to reach quick decisions. He sees a great number of apparently trivial cases among which, at any time, usually when he is most busy, may be one with the early signs or symptoms of a grave condition, such, for instance, as an acute mastoiditis, a perforated duodenal ulcer, strangulated hernia, or an acute appendix. It is no use sending such cases home to the panel doctor, who may be out and unable to see the case for some hours, consequently the factory doctor has to find a bed for them in hospital and arrange for transport there. This is when previous working coöperation with the nearest hospital comes in so useful, and reciprocal arrangements are easily made in view of the fact that the work of the clinic relieves the hospital of so much of its other work, as I will explain shortly. In a large concern the firm must have its own motor ambulance. The medical officer finds that his advice and guidance are sought regarding a multitude of health problems, the answers to which have to be given definitely and often by telephone. He must know which specialist to recommend in any particular case, what days of the week certain departments of hospitals see patients, where beds are available, what to do with a case of mumps, how to disinfect a room, what the various diagnoses on panel certificates really mean, and how long incapacity is likely to last in various complaints. Sometimes he may have to see between 70 and 90 patients in a day, and always he will find the work extremely exacting though full of interest. He has opportunities enjoyed by few of his professional colleagues for preventing avoidable disease, for detecting the earliest signs of impending illness, and for assisting to build up healthy, happy, useful citizens. His knowledge and experience should enable him to estimate the capabilities of the individual worker, to guard him against injustice, and to protect the employer from imposture. His position, moreover, is largely privileged and gives him certain advantages in dealing with refractory patients that are denied to panel or private practitioners, for, unlike them, he can, should occasion arise, be candid without fear of consequent unpopularity."

[Colonel Mummery explained the method in which, under his own particular organisation, while the actual treatment is left to the practitioner or the hospital, a welfare visitor keeps in touch with the patient; but in regard to the treatment of injuries, where he noted the recent increase in figures and mortality, he pointed out the value of treating these at the clinic, where the employee was able to continue his work or lived nearby. He described the facilities furnished at his own clinic, and pointed out that the economy of time thus ensured was a valuable asset in industry. When further assistance than the clinic could render was required he found that the splendid work of the voluntary hospitals too often did not meet the case, and he suggested that another kind of hospital or after-care centre was what the factory clinic should provide, where the remedial work would help the employee and the industrial

manager, and the covering insurance companies would be satisfactorily informed

After commenting on the valuable work that can be done at the industrial clinic in the detection of cutaneous disorders, he continued :—]

Special Treatments at the Industrial Clinic.

"Dental sepsis is responsible for so much ill-health and absenteeism that it is unwise to pass applicants with serious dental caries or pyorrhœa until these conditions have been corrected. It is a sound rule that sick absence due to this cause disqualifies an employee from receiving compassionate financial assistance. The equipment of the dental surgery, consisting of furniture, instruments, and materials, is provided by the firm. At Cadby Hall Clinic we have two part-time dental surgeons giving their services on five days a week. Appointments are made in advance. Treatment includes fillings, scaling, extractions, and provision of dentures. The latter are made in the dentists' own workrooms. All charges are those laid down by the National Health Insurance dental benefit scheme with special terms for those not entitled to that benefit, and extended payments by small weekly deductions from wages are arranged, the firm accepting liability for any bad debts. During 1930 the dental treatments at the clinic numbered 4124.

"An ophthalmic centre is maintained at the clinic for employees. Of recent years many of the National Health Insurance societies have granted ophthalmic benefit to insured persons, sending them to an optician for the correction of errors of refraction. In order to improve upon this arrangement the firm provides the services of a specialist ophthalmic surgeon at the clinic on one evening a week and supplies the spectacles he orders at a contract price. The firm pays him a salary and collects any panel ophthalmic benefit granted by the society. In other cases time-payment is allowed.

"Massage, radiant heat, high-frequency treatment, and facilities for certain remedial exercises are available at the clinic all day. Great success has attended the treatment here of flat-foot by regular massage and eversion and flexion exercises. Stiff fingers after accidents respond well to the method of pumping coloured water from one bottle to another, and stiff shoulders and arms rapidly regain function with other special forms of exercise. Two fully qualified nurses, holding the certificate of the Chartered Society of Massage, form the staff of this department and also take their turn in the surgery. I have already referred to the value of this work in the factory. During 1930, 2323 massage and remedial treatments were given.

"Manicure is provided free for employees in certain departments of the factory where special cleanliness is desirable or where there is a tendency to the development of cracks or other slight trauma setting up infection—such as among fruit-pickers, who were particularly liable to peri-ungual sepsis before manicure stopped it. Chiropody is available at small charges for the treatment of corns.

"Facilities for consultations with specialists at the firm's expense are available through the medical officer and welfare department, who have made arrangements to that end with consultants in every branch of practice.

Records and Statistics.

"The duty of keeping records concerning the health of the factory staff, and of the incidence of illness and accidents among them, falls upon the welfare department. The staff of the clinic in my medical charge consists of a charge-sister and four other fully trained nurses, two of whom, as already stated, are qualified masseuses. As the work of the factory goes on day and night, one nurse has to be on duty all night, and two are on duty in the surgery during the busier hours of the day. The necessary clerical services, of course, are also provided.

"During 1930, 9995 injuries were treated at the clinic. Of these, 8455 remained at work and 1540, representing 15·4 per cent., were put off duty; 12,748 re-dressings were done, 11,538 of these were during the continuance of employment, and 1210, representing 9·5 per cent., while away from work; there were 2255 attendances of skin cases of all kinds, 1797 of these while at work, and 458, representing 20·3 per cent., during absence from work. (In this connexion I must state that I insist upon a short absence from work in all acute skin diseases because I find it considerably shortens the duration of the complaint and ultimately saves lost time.) 12,258 cases of illness were seen and treated; 9446 of these remained at work, and 2812, representing 23 per cent., were sent home; 2415 persons were medically examined for employment; 1033 patients from outlying hotels, corner houses, and tea shops were seen in consultation.

"I have tabulated the various causes of absenteeism amongst the factory operatives during 1930, showing the number of cases amongst males and females, respectively, the lost time, and the average duration of absence in each case. It should be noted that amongst these operatives the males exceed the females in number by about 2000. My table shows that acute respiratory diseases account for the largest number of cases affecting the sexes fairly equally, there being 1157 cases in all, with a total of 12,510 lost days, giving an average of 11 days per case. Acute gastritis and gastro-enteritis come next in frequency, affecting females much more than males, with a total of 504 cases and 4615 total days lost, giving an average of nine days per case. Fibrositis was more prevalent amongst the males, the total number of cases being 261, and the total days lost 4368, with an average of 17 days per case. Diseases of the ear, nose, and throat were more common amongst the females, with a total of 265 cases, and 3189 lost days, giving an average of 12 days per case. Furunculosis was about three times as common among the males as among the females. There were 128 cases and 1648 lost days, with an average of 13 days per case. Neuritis predominated among the females, but the males, on account of the larger incidence of lumbago and sciatica among them, were longer away from work than the females. The latter, on the other hand, suffered more from brachial neuritis, which, however, cleared up more quickly. There were 106 total cases, with 1058 days lost, and an average of 10 days per case. Genito-urinary diseases were almost entirely confined to females. Tubular disease, uterine displacement, and true dysmenorrhœa accounted for most of the cases, the total number of which was 197, and the total days lost 1345, giving an average of seven days per case. Very few cases of venereal disease in either sex occurred. Taking into account the number of males and females employed as factory operatives, the incidence of accidental injuries was fairly equally distributed between the sexes, and the average of 13 lost days per case from this cause compares favourably with published statistics.

Conclusions.

"At the beginning of this lecture I mentioned that Sir George Newman's report showed that the insured population of England and Wales lost on an average 3·73 weeks working time per annum, and Sir Thomas Oliver (*Journal of State Medicine*, August, 1930) states that during the past 30 years the length of sickness has increased from 16½ days to 28 days. It is interesting to compare with these figures for the insured population of the country as a whole those of my clinic, which are as follows. The factory staff lost on an average 13 working days each in 1929 and eight days each in 1930. The average duration of absence on account of illness in 1929 was 15 days, and in 1930 it was 12·7 days. The average duration of absence on account of injuries in 1929 was 13·3 days, and in 1930 it was 13 days.

"The clinic I have been referring to is the chief clinic of a very large firm with a factory and clerical staff numbering 6132, and, in addition, the clinic serves in some degree also the firm's 30,000 employees

scattered throughout London. It even serves to some extent numerous other employees in the provinces, and even in Ireland, for travellers and motor drivers are sent for examination on engagement, and special cases may be sent to Cadby Hall Clinic for assistance. The organisation is not necessarily applicable to other firms. I have outlined, however, a scheme of services which can be modified to meet most needs, and have laid special stress on those which have proved most valuable both to employer and employee. For the past seven years, during which time the present welfare organisation of my firm has been built up, I have been able to watch the steady improvement in the health and general condition of its employees. As the attendances at the factory surgery have increased, the absenteeism has decreased; with much better dental hygiene the incidence of gastritis, lumbago, and other varieties of fibrositis has fallen; and, whereas in the early days pediculi and other human parasites were not infrequently seen, they are now only conspicuous by their absence. The crying need of industry to-day, however, is for some means of controlling effectually the common complaints, such as epidemic nasal catarrh, bronchitis, epidemic influenza, and rheumatism, which together are responsible for so much absenteeism and are so serious a burden on industry. Yet, like many others, I have carried out extensive and carefully controlled experiments with vaccines and nasopharyngeal prophylaxis in an attempt to reduce the incidence of epidemic coryza, but with entirely negative results; and furunculosis, lacking as it does any common causative factor, is also at present outside the scope of our preventive methods."

THE DRESDEN HYGIENE MUSEUM.

ALTHOUGH a beginning has been made in this country in the provision of museums for teaching hygiene to the public, these as a rule are parts of other buildings not specially designed for the purpose. The Dresden Hygiene Museum has lately been given a home of its own, which is described in the *Museums Journal* for July. The building stands well away from others in a beautiful situation in the heart of Dresden. The plans of the architect, Prof. W. Kreis, provide well-lighted corridors running through the whole museum; the exhibits are almost all placed in rooms on the outer side of the building; these are lit by top-side windows. Monotony has been avoided by giving each of these rooms an individual shape and colour and by using different materials for flooring and walls. For the visitors a rest room, refreshment room, and roof garden are provided. Roughly, half the area of the building is devoted to exhibits; the other is given over to ancillary purposes, workshops and packing rooms, bookshelves, laboratories, store rooms, and a gymnasium. Much help is afforded in the teaching of hygiene outside the museum. In the workshops material for teaching is made; this includes, besides the ordinary anatomical and biological diagrams, posters, lantern slides, and especially casts. These models are almost unbreakable; they can be washed, and are not affected by changes of temperature, and, owing to mass production, are considerably cheaper than wax models. Travelling exhibitions are organised. These have been shown widely over Europe, and a special motor-car has been fitted for smaller exhibitions in the lesser towns and villages. Another section produces its own films. In the same building is the Academy of Hygiene, the head of which is Prof. Weisbach, in which teachers of hygiene are trained.

Three million people visited the International Hygiene Exhibition in Dresden last year. The exhibition has been repeated this year, and will go on to the end of September.

HOLIDAYS FOR WORKING WOMEN.

THE following letter reaches us from the offices of the Women's Holiday Fund:—

"May we again appeal on behalf of the working women of London for the generous help of those of your readers who are now enjoying, or about to enjoy, their own holidays? Of all who toil hardest year in, year out, the working-class mother holds the foremost place. Her labours are never done, and in her self-sacrificing life there is little room for any sort of recreation. A holiday means to her not only respite from work but often restoration to health, and it is in consequence a necessity rather than a luxury. Last year the Women's Holiday Fund (founded in 1895) sent away 1154 women and 640 children. Whether or no the same number can be helped this year depends largely on the result of this appeal. The women pay as much as they can afford towards the cost of the fortnight's holiday, many of them putting by a few pence each week in order to do so. Donations, large or small, will be most gratefully received by the Secretary of the Fund, 76, Denison House, Vauxhall Bridge-road, London, S.W.1."

The appeal is signed by Lady Maud Carnegie, the Bishop of London, the Rev. F. C. Devas, S.J., the Rev. J. Scott Lidgett, Sir George Blacker, F.R.C.P., and Mrs. Frank Pownall (Chairman of Executive Committee).

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

PADDINGTON MEDICAL SOCIETY.

The next meeting will be held on TUESDAY, July 14th, 9 P.M. (at the Great Western Royal Hotel, Paddington, W.): Discussion on Maternal Mortality, to be opened by Dr. G. E. Oates, Mr. T. G. Stevens, and Dr. Leonard Colebrook.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE, 1, Wimpole-street, W.

MONDAY, July 13th to SATURDAY, July 18th.—PRINCE OF WALES'S HOSPITAL, Tottenham, N.15. Second week of post-graduate course in general medicine and surgery. Daily 10.30 A.M. to 5.30 P.M., demonstrations, lectures, operations.—Further particulars from the Fellowship of Medicine.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, July 13th.—10 A.M., Gynæcological Ward Visit, Genito-Urinary Operations, Skin Department. 11 A.M., Surgical Ward Visit. 2 P.M., Surgical Ward Visit, Medical, Surgical, Eye, Gynæcological Out-patients.

TUESDAY.—9.30 A.M., Operations. 10 A.M., Medical Ward Visit, Dental Department. 11 A.M., Throat Operations. 11.30 A.M., Surgical Clinical Demonstrations. 2 P.M., Medical, Surgical, Throat, Out-patients, Operations, Medical Ward Visit.

WEDNESDAY.—10 A.M., Medical Ward Visit, Children's Medical Out-patients. 2 P.M., Medical, Surgical, and Eye Out-patients. Gynæcological Operations. 4.45 P.M., Venereal Diseases.

THURSDAY.—10 A.M., Neurological Department. 11.30 A.M., Treatment of Fractures. 2 P.M., Medical, Surgical, and Eye Out-patients. Genito-Urinary Department, Operations.

FRIDAY.—10 A.M., Medical Ward Visit, Skin and Dental Departments. 12 noon, Medical Lecture. 2 P.M., Medical, Surgical, and Throat Out-patients. Operations.

SATURDAY.—9 A.M., Throat Operations. 10 A.M., Medical Ward Visit, Surgical and Children's Medical Out-patients.

CHARING CROSS HOSPITAL MEDICAL SCHOOL POST-GRADUATE COURSE.

SUNDAY, July 12th.—10.45 A.M., Dr. R. A. Hickling: The Investigation and Treatment of Cases of Severe Anæmia. 11.45 A.M., Dr. H. G. Everard Williams: Physiological Principles in Gynæcology.

ST. MARK'S HOSPITAL, City-road, E.C.

THURSDAY, July 16th.—4.30 P.M., Sir Charles Gordon-Watson: Carcinoma of the Colon.

UNIVERSITY OF BIRMINGHAM.

TUESDAY, July 14th.—3.30 P.M. (at the Children's Hospital), Prof. Parsons: Demonstration of Cases of Children's Diseases.

FRIDAY (at the Queen's Hospital).—3.30 P.M., Dr. J. F. Brailsford: X ray Investigation of Alimentary Canal.